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THE NATIONAL GEOGRAPHIC MAGAZINE

DECEMBER, 1920

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To carry out the purpose for which it was founded thirty-two years ago, the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. For material that the Magazine can use, generous remuneration is made. Contributions should be accompanied by an addressed return envelope and postage, and be addressed: Editor, National Geographic Magazine, 16th and M Streets, Washington, D. C.

Important contributions to geographic science are constantly being made through expeditions financed by funds set aside from the Society's income. For example, immediately after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. So important was the completion of this work considered that four expeditions have followed and the extraordinary scientific data resultant given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures, evidently formed by nature as a huge safety-valve for erupting Katmai. By proclamation of the President of the United States, this area has been created a National Monument. The Society organized and supported a large party, which made a three-year study of Alaskan glacial fields, the most remarkable in existence. At an expense of over $50,000 it has sent a notable series of expeditions into Peru to investigate the traces of the Inca race. The discoveries of these expeditions form a large share of the world's knowledge of a civilization which was waning when Pizarro first set foot in Peru. Trained geologists were sent to Mt. Pelee, La Soufriere, and Messina following the eruptions and earthquakes. The Society also had the honor of subscribing a substantial sum to the historic expedition of Admiral Peary, who discovered the North Pole April 6, 1909. Not long ago the Society granted $20,000 to the Federal Government when the congressional appropriation for the purchase was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people and incorporated into a National Park.

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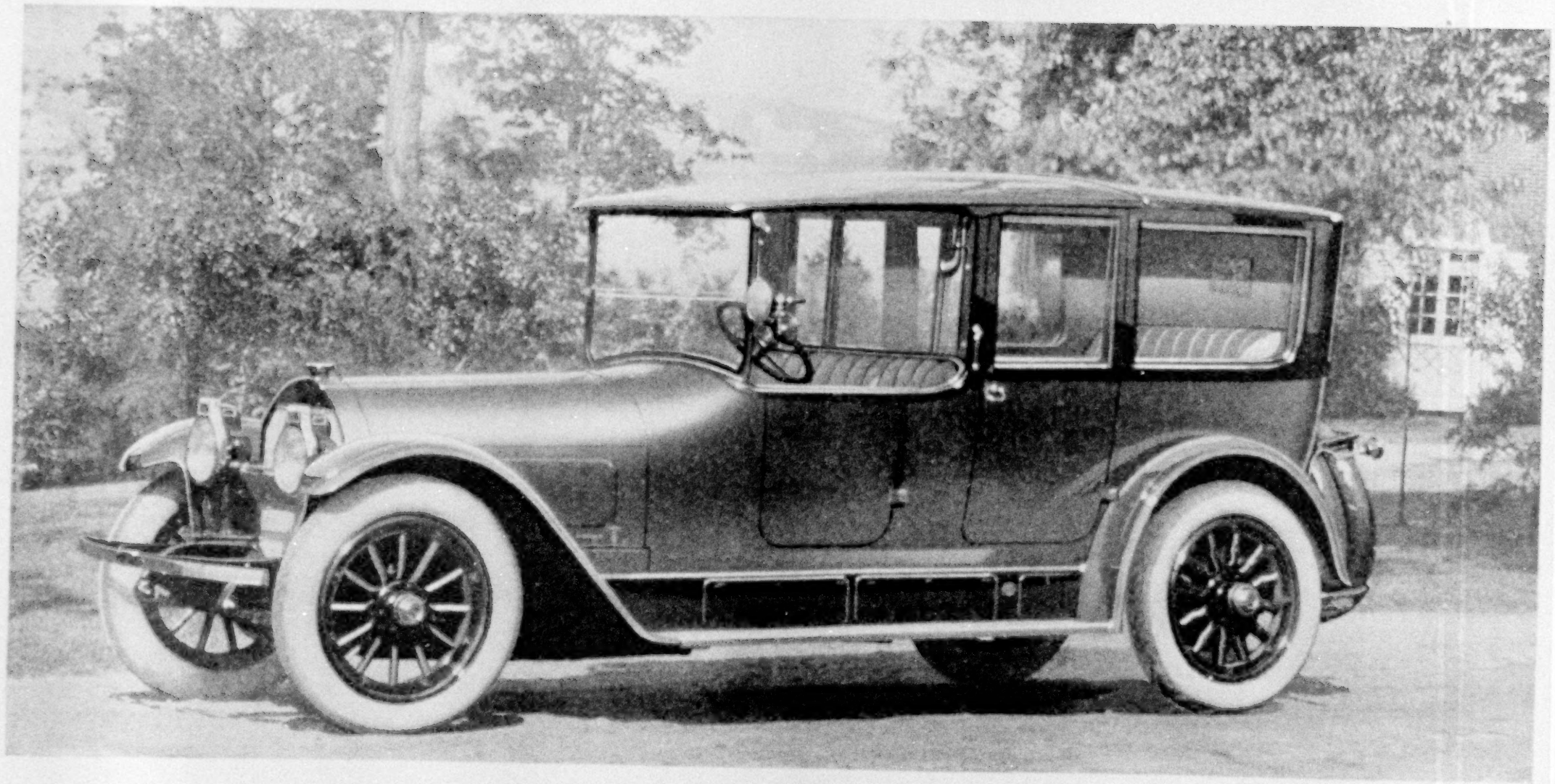

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The Fairbanks Scale owes its origin to the ingenuity of Thaddeus Fairbanks, Vermont inventor, manufacturer and artisan. He sought a short-cut from the laborious method of weighing hemp on the crude steelyards then in use.

Working far into the night to perfect his crude scale, prior to the day his first salesman went out to secure orders, Thaddeus Fairbanks conceived the idea of the platform scale. His first model embodied the lever system and knife edge supports today found in platform scales, the fundamentals of which modern science has never been able to improve upon.

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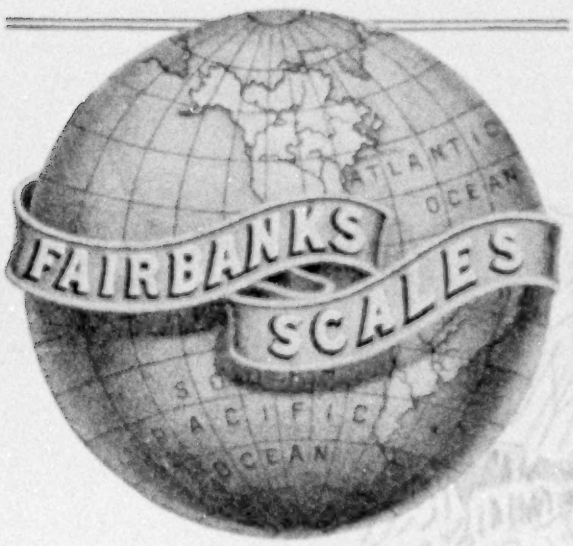

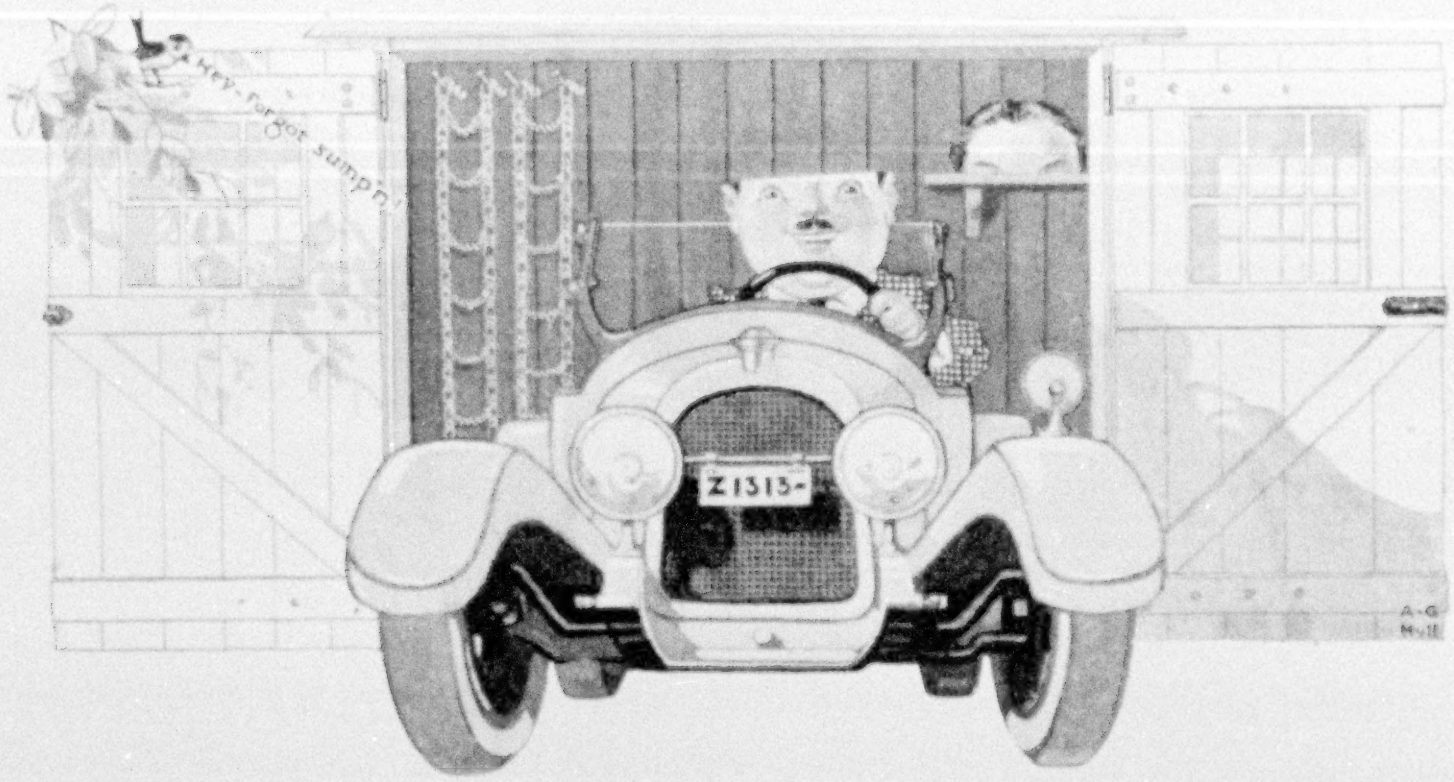

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Brains and *Chains* must be *used* for the safe operation of automobiles.

PRACTICALLY every car in operation has *Weed Tire Chains* — in the garage. Even the novice knows there are times when he cannot drive safely without them. The trouble comes in making drivers *think* to always carry them in their cars and *think* to put them on the tires "at the first drop of rain."

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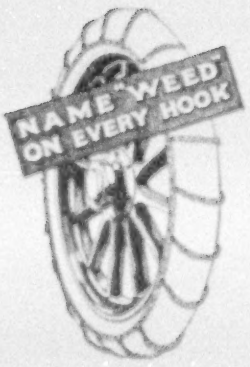

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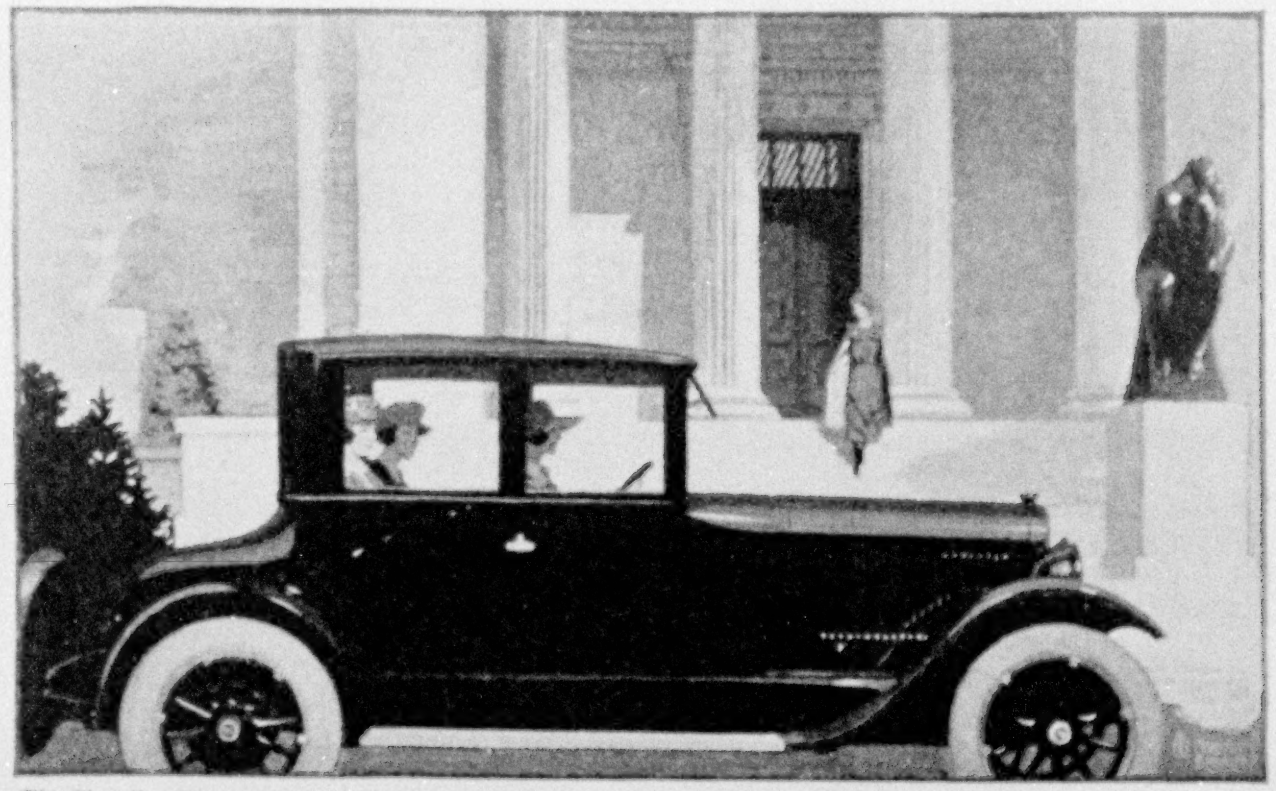

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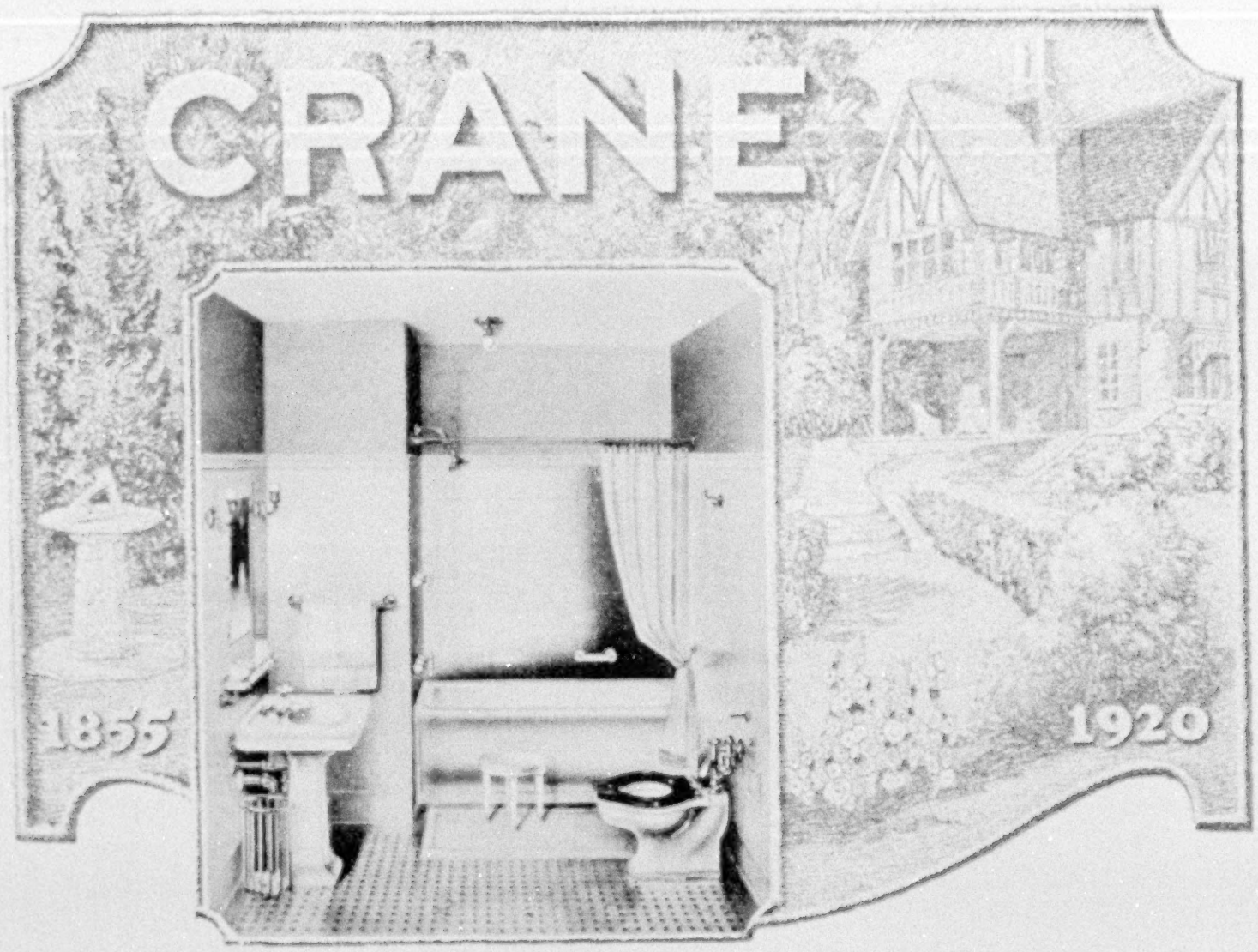

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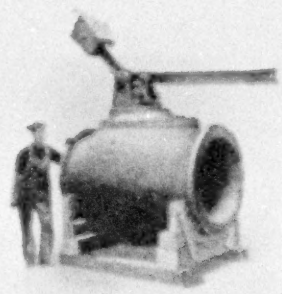

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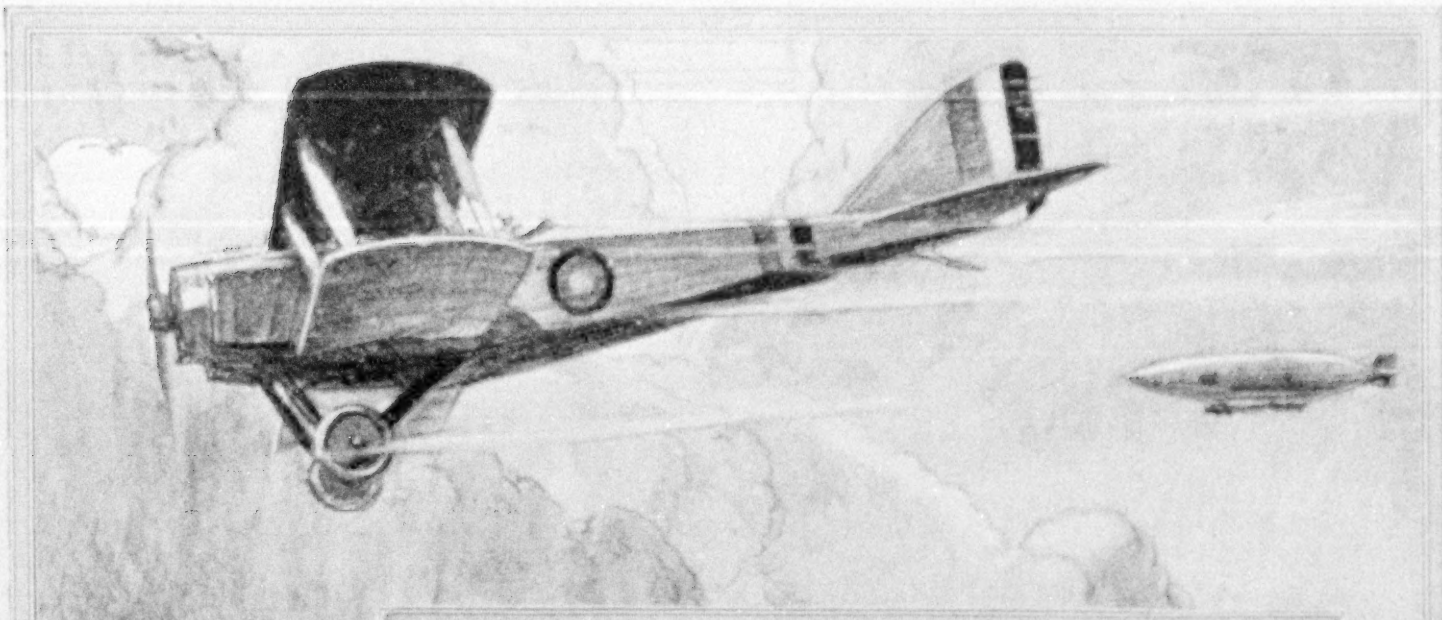

MAZDA LAMPS: RESEARCH AND A RESULT

THE dirigible that called a fleet of subchasers to destroy a skulking U-boat; the airplane that signalled ranges to our artillery from over the enemy lines; the destroyer patrol that kept in touch through the cold fogs of the North Sea; our regiments and brigades and corps, all depended upon wireless communication. Swift and reliable radio service largely depended upon the improved vacuum-tube apparatus known as the pliotron. And the pliotron, the heart of the wireless equipment, is in great part a development of the Research Laboratories of the General Electric Company.

The use of the vacuum-tube equipment means added power, greater speed and higher efficiency.

In appearance and structure the pliotron is akin to the modern metal-filament electric lamp. It is blown of glass, and in its vacuum is a complicated series of wires, grids and plates. The Research Laboratories, which include the combined skill and technical knowledge of the scientists of the General Electric Company, were peculiarly equipped to deal with problems that arose with our entry into the war. MAZDA Service knows to the last intricate detail the structure and manufacture of every type and size of electric lamp. This specialized knowledge was swung to focus on the vacuum-tube.

Before the war there had been no commercial production of pliotrons. Almost overnight came a paramount need for thousands of them. MAZDA Service made possible the devising of special machinery, standardized tests, and so quantity production of pliotrons began, and they became hard-working elements in our war-time radio work.

It was an important contribution, of vital war-time significance and of increasing peace-time value. The pliotron was produced through the unique combination of brains and equipment that constitute MAZDA Service.

MAZDA

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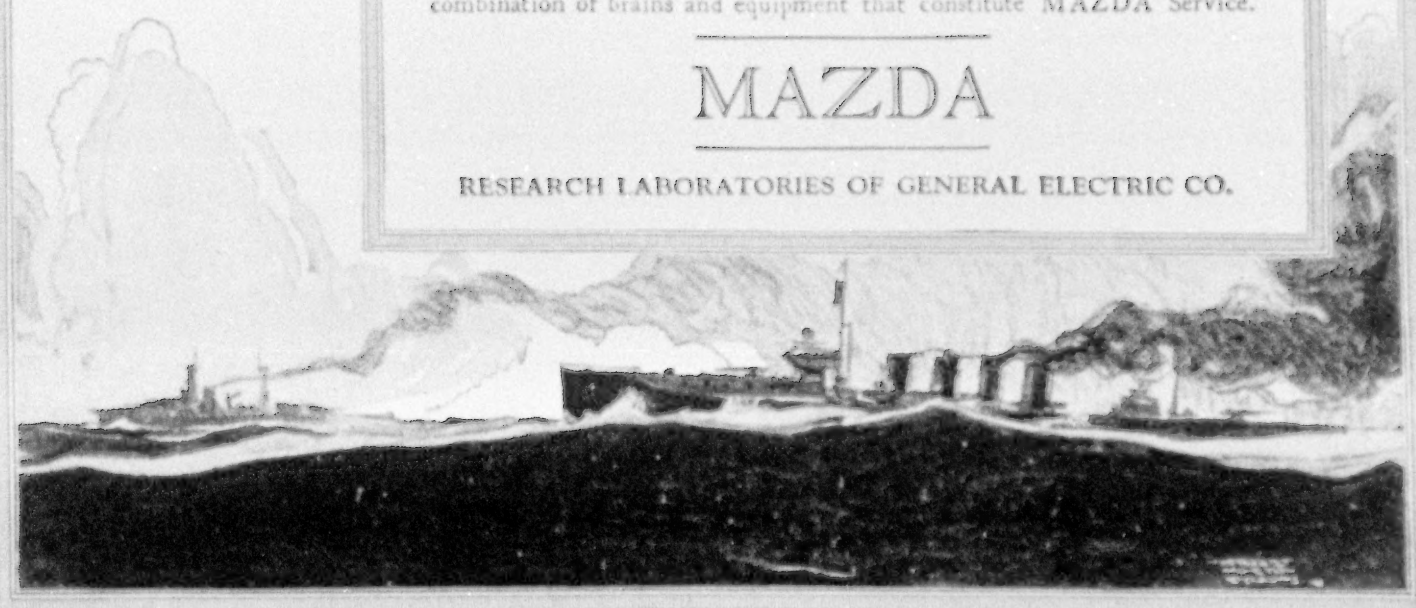

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The Lexington, winner of the Pike's Peak Hill Climb, Labor Day, crossing the finish line at 33 miles per hour on one of the preliminary runs. This car was equipped with CONNECTICUT Ignition.

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A system which functions perfectly under this terrific grilling is surely supreme for private driving. Connecticut should be on the next car you buy

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It has always been treated, by the American people in particular, as an exception—always set apart, and singled out, and never judged by ordinary standards.

It has always been thought of, and is still thought of, first, and foremost, and all the time, only in terms of its goodness, and the results it gives.

All of this is wonderful, in one way, and quite natural and logical in another.

It all dates back to the day when John and Horace Dodge conceived and designed and finally built the car—after warning each other, and their associates, not even to think of it in any other terms than the best obtainable value.

They began with a few almost absurdly simple principles, bluntly expressed and rigidly executed, about decency and honor and integrity—such as most of us wrote in our copy books at school.

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These policies and principles have never been changed, and never will be changed, by so much as a hair's breadth; and they have come to be recognized and accepted as Dodge Brothers' principles wherever motor cars are driven.

It has all happened as John and Horace Dodge had planned it—quite simply, naturally, and automatically, all over America, and all over the world.

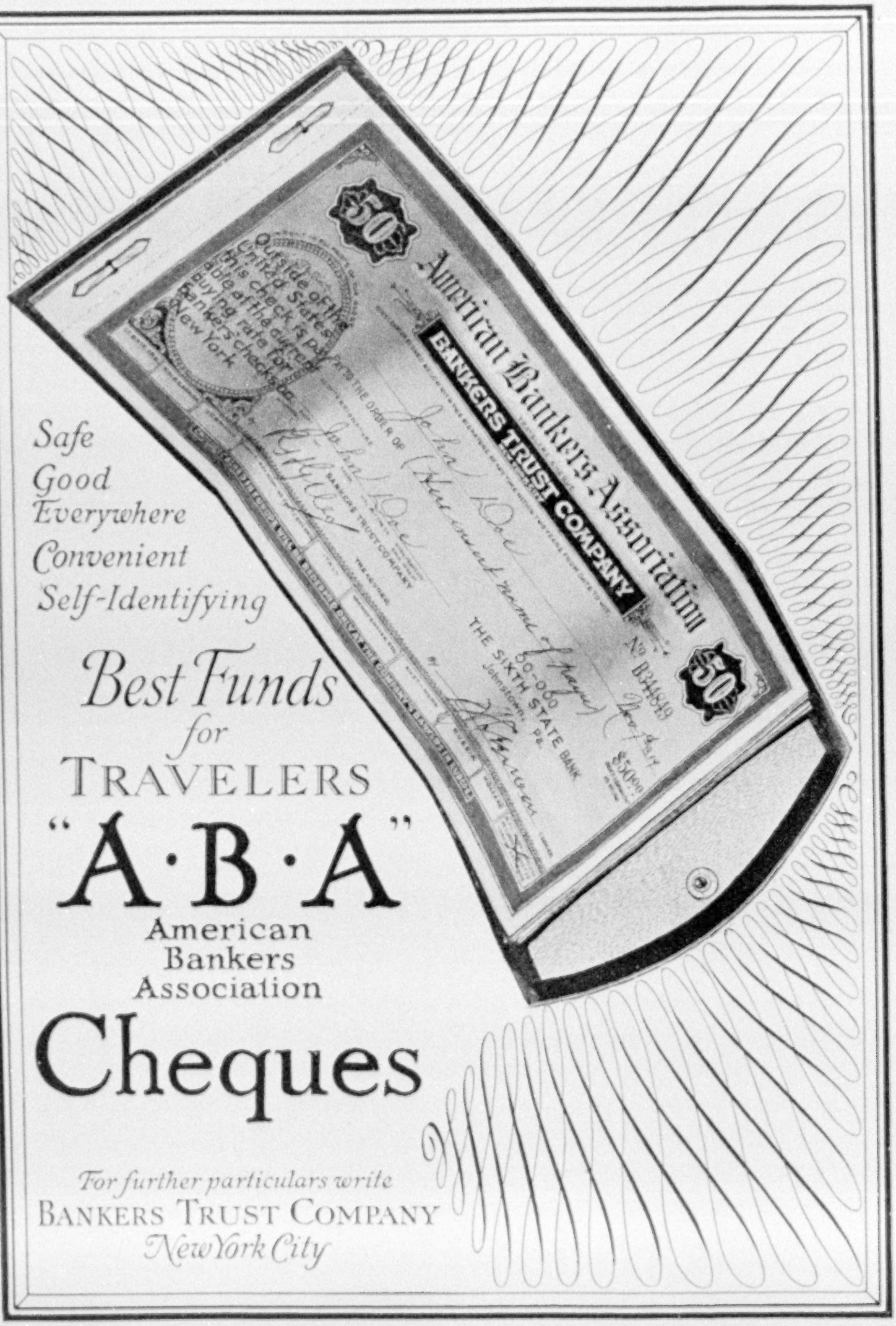
People *do* discriminate as Dodge Brothers contended they would; people *will* find out when a motor car is well built and gives good service and great good value.

Dodge Brothers' market today is where they planned to locate and establish it—in the mind and the heart of every man and woman who admires good work, well done.

It will last, and it will keep on growing, as it has kept on growing for five years (faster than Dodge Brothers' works could keep pace with it), as long as the number of those who believe that a manufacturer should build to serve and not merely to sell, continues to increase.

All is well with Dodge Brothers today, because John and Horace Dodge builded well in the beginning, and because their business will continue to build well until the end.

DODGE BROTHERS, DETROIT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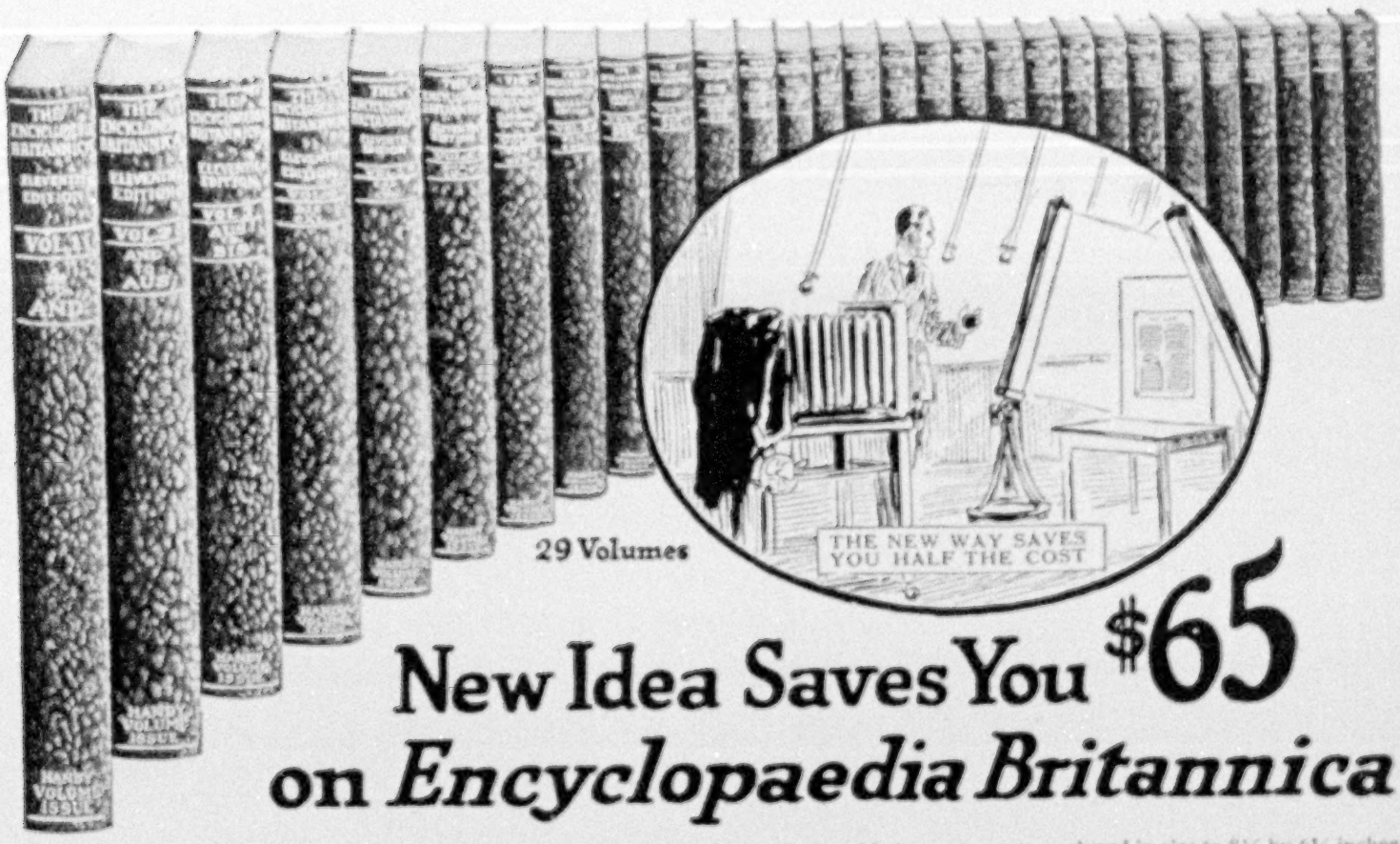

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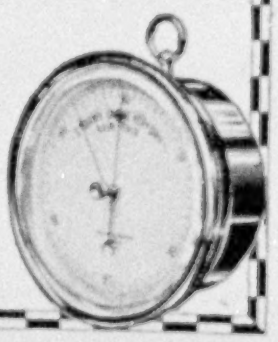

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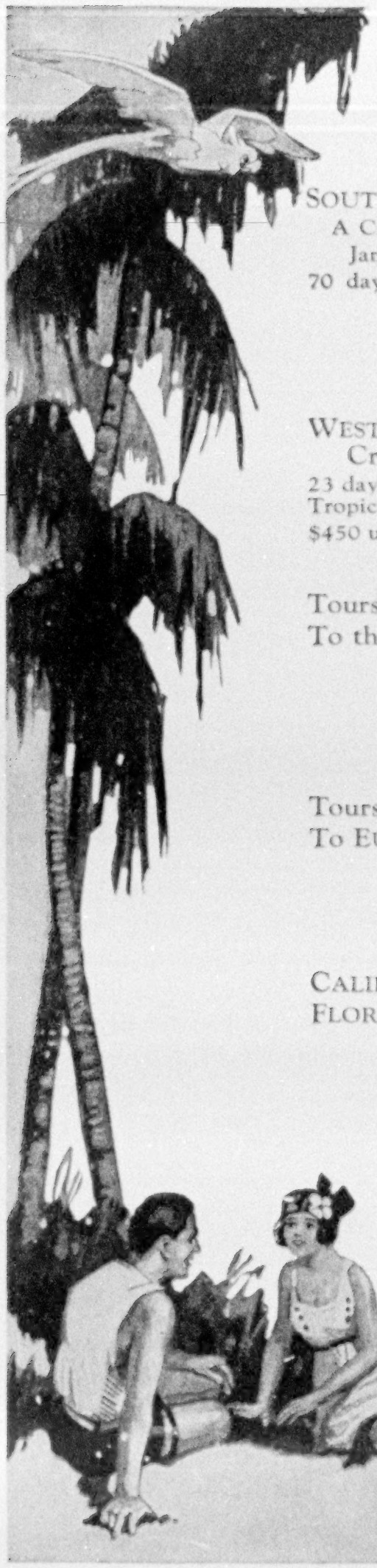

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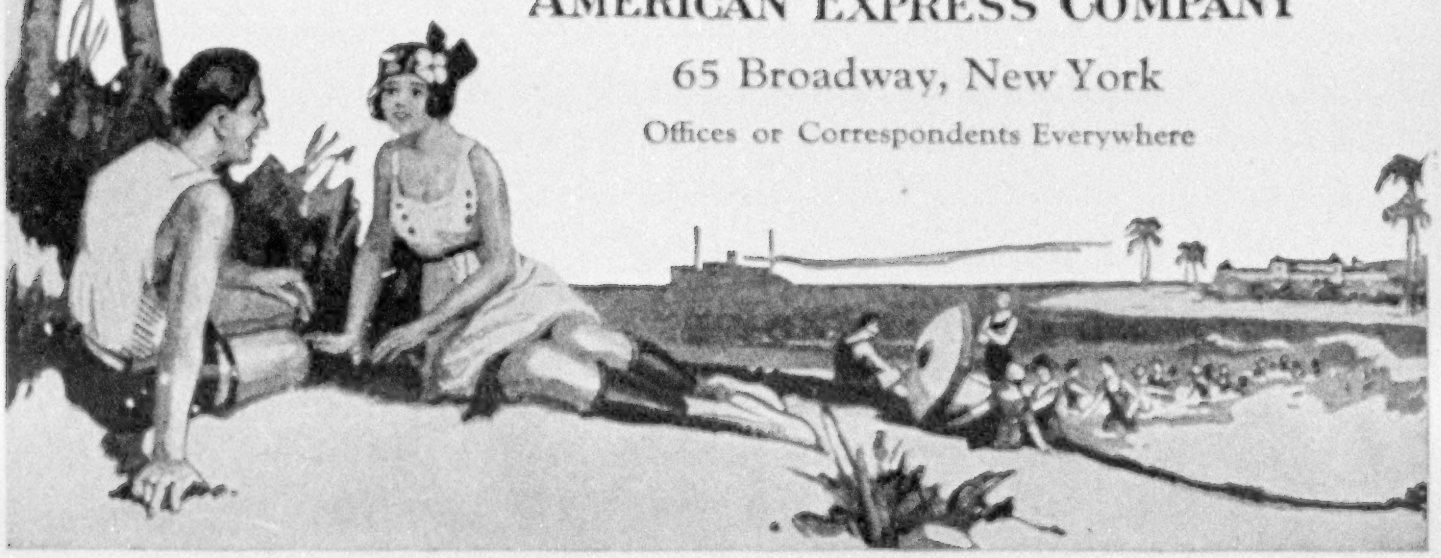

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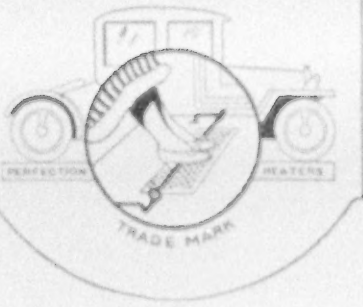

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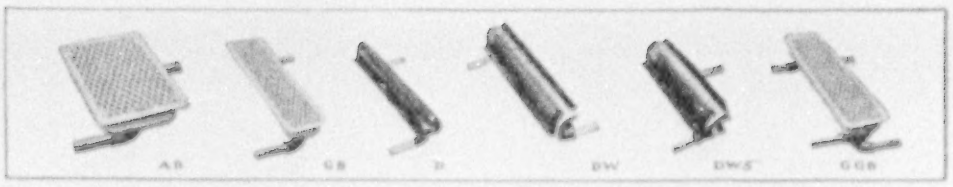

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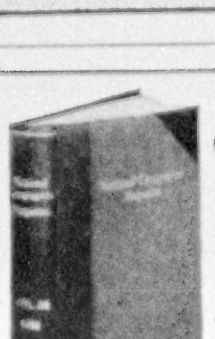

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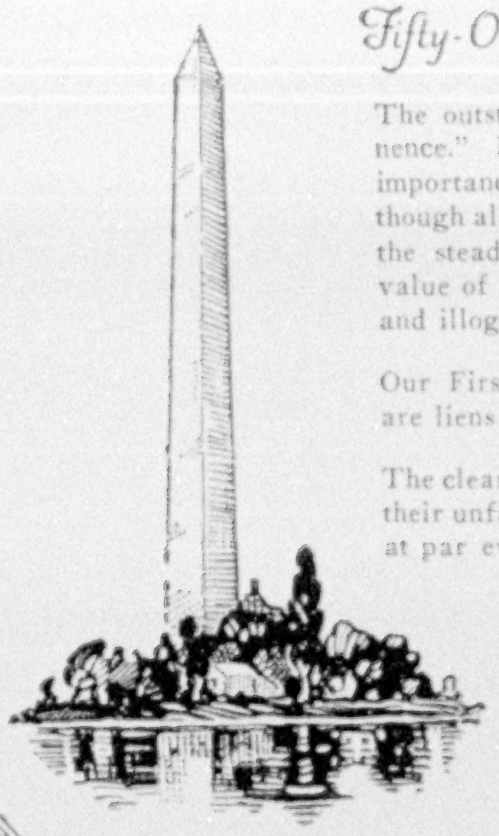

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VOL. XXXVIII, No. 6 WASHINGTON DECEMBER, 1920

THE NATIONAL GEOGRAPHIC MAGAZINE

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FALCONRY, THE SPORT OF KINGS

Once the Means of Supplying Man's Necessities, It Has Survived the Centuries as One of the Most Romantic Pastimes of History

BY LOUIS AGASSIZ FUERTES

Illustrations in Color from Paintings by the Author

IT WILL surprise many to learn that the art of falconry, or hawking, goes back to the remote and unwritten past. We have many proofs of this in the frescoes and sculptures of the early Egyptians and Persians. And in all the time that has passed since that early day there has never been a total lapse of the art; falconry has in every age been carried on in some part of the world. Reference material is found in books not only of England, Holland, France, Italy, and Spain, but of China, Japan, and Russia, while the sport has been followed from immemorial time in India and northern Africa.

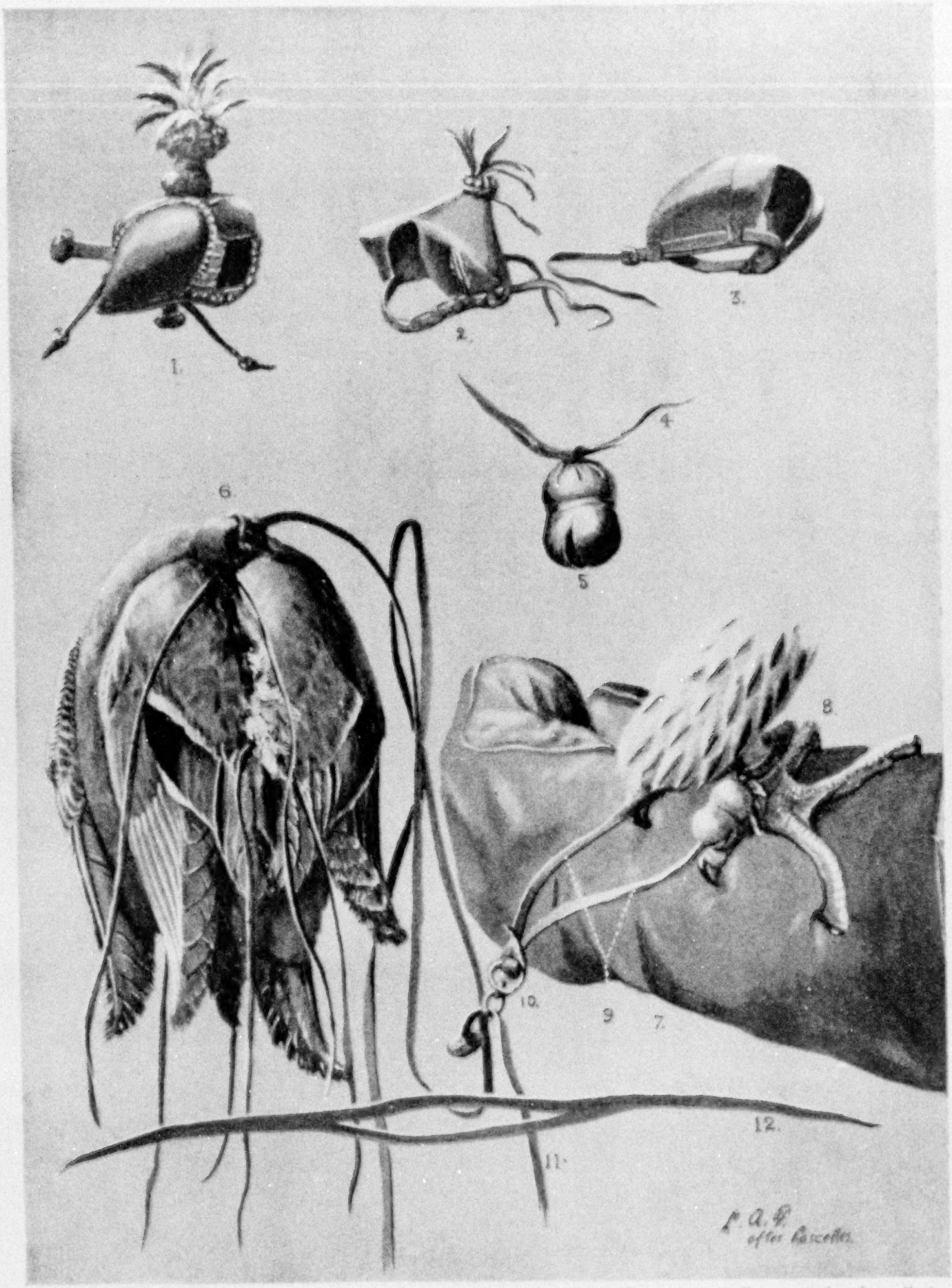
The ancient Greeks apparently knew nothing of falconry, but the Lombards, settling in north Italy about 560, knew of the art, and by 875 it had become a generally known practice throughout western Europe and Saxon England. From that time it thrived, filling an important place in the life of the times.

RETURNING CRUSADERS WERE ENTHUSIASTIC DEVOTEES OF FALCONRY

A vast impetus was given to falconry by the returning crusaders, who had become familiar with the methods of the Orient and had brought with them both falcons and trainers. War lords never left their courts without their falconers and a cadge of hawks, to be flown at anything that might be deemed worthy.

The gun, of course, delivered a serious blow to the art, as it provided a quick, sure, and inexpensive way of getting meat. Still, the real devotees were never greatly affected by this device, and through the centuries, up to the rebellion in England, and later through the French Revolution on the Continent, falconry survived the difficulties imposed by the introduction of firearms, the breaking up of the country into small holdings, the reclaiming of large areas of wild land, and other inevitable changes incident to a multiplying and advancing population.

As a general practice, however, falconry in Europe ceased after the great social upheavals mentioned. Its maintenance as a sport since then is attributable in large measure to half a dozen hawking clubs, among which are the Falconers' Club, the High Ash Club, and the Loo Club in Holland. There were probably thirty or forty private establishments in England in 1914, but no doubt the World



Drawing by Louis Agassiz Fuertes (after Lascelles)

TRAPPINGS AND GEAR USED IN FALCONRY: "HAWK FURNITURE"

(1) Dutch hood, commonly used on all but newly caught hawks; (2) Indian hood, preferred by some falconers for the same use as the Dutch hood; (3) Rufter hood, for new-caught hawks, made of soft leather and open behind, merely covering the eyes; (4) Bewit, a light strap by which to hold on the bell; (5) Indian bell, the type preferred to all others; (6) Lure; (7) Glove or gauntlet; (8) Method of attaching the bell and jess to falcon's foot; (9) Jesses, light straps permanently attached to falcon's feet; (10) Swivel, through which is passed the leash; (11) Leash, by which the hawk is held till quarry is sighted; and (12) Brail, a slit strap that goes over one wing and is tied around the other side of the hawk, to prevent it from "bating," or flying off when still wild.

War has made a heavy toll on both the personnel and the support of the sport.

Within the last twenty years there had been a great renascence of amateur falconry among the English, and some rather successful attempts have been made in America, particularly in the Genesee Valley, New York.

The great expense of maintaining the birds, due to the scarcity of experienced trainers and catchers, and the difficulties of forwarding so rangy a sport in the settled conditions of most of our eastern country have made it impossible, however, to achieve any real success in America and the growing sentiment against killing all but a few species of game-birds will probably act as a further deterrent. Still, there are several common birds which are recognized as game that would make admirable quarry for the peregrine, notably the quail of our Atlantic States and the sharp-tailed grouse of the northern prairies. The native wild goshawk is already the chief problem of all the grouse of our northern wooded section.

HAWKS ARE AMONG THE SHYEST OF CREATURES

While it is true that in training hawks to hunt, as in all other animal training, advantage is taken of the natural proclivities of the creature in hand, nevertheless, it seems at first glance that these vigorous and intrepid birds are taught to go almost directly against their instincts. First of all, being among the wildest and shyest of creatures, they must be taught that man, instead of being their worst enemy, is really their best friend. Then the rest becomes comparatively easy, if no mistakes are made. But any one of hundreds of possible errors may undo weeks of patient and successful labor.

Then, too, since different kinds of game must be hunted at different times of the year and in different kinds of cover, either the same hawk must be trained first for one type of work and later for something entirely different, or different kinds of hawks must be used.

Of the hundreds of kinds of hawks, only certain ones possess the combination of qualities necessary for this beautiful and romantic sport. A hawk must be at once kind and fierce; it must be able to stand the changes of climate of its owner's country; it must be strong enough and swift enough to overtake and strike down its quarry, and intelligent enough to be able to unlearn much of its native knowledge. These qualities are possessed by only about a dozen species, belonging to two groups or genera—the true falcons, of the genus Falco, or long-winged hawks, and the short-winged group of forest-hawks known as "Accipiters." Only two of the latter are used, the goshawk and the European sparrowhawk. (The bird known in America as sparrowhawk is a small falcon which feeds principally on insects and is useless for hunting.)

THE PEREGRINE IS THE MOST COSMOPOLITAN OF BIRDS

The peregrine is the only falcon proper found all over the world. There is no other bird with such a cosmopolitan range. It is found on both sides of the Equator, throughout the entire world, nearly to the Arctic and Antarctic circles. It is natural, then, that this should be the falcon of falcons and known to all ages of man as a tractable and capable help in his search for food; for falconry was at first a very practical and even sordid pursuit, only later—much later—becoming the sport of the privileged classes.

A peculiar set of traditions and an equally picturesque language have become inseparably attached to the art of falconry; and it is only fair to the Scotch, who, in their conservatism, have been responsible for the colorful language of golf, to give them the credit for preserving the romantic terminology of falconry. It was in Scotland that the art was perpetuated after it had languished over most of Europe.

Ancient history is eloquent with the influence of the noble sport of hawking, the history of medieval Europe is richly colored with it, sixteenth and seventeenth century literature fairly abounds in passages concerning it, and the language of the day was so tinctured with the jargon of the hawkers that it is fair to conclude that, before men had knowledge of gunpowder and the fowling-piece, hawking was such a general practice as to be the principal means of obtaining wild game.

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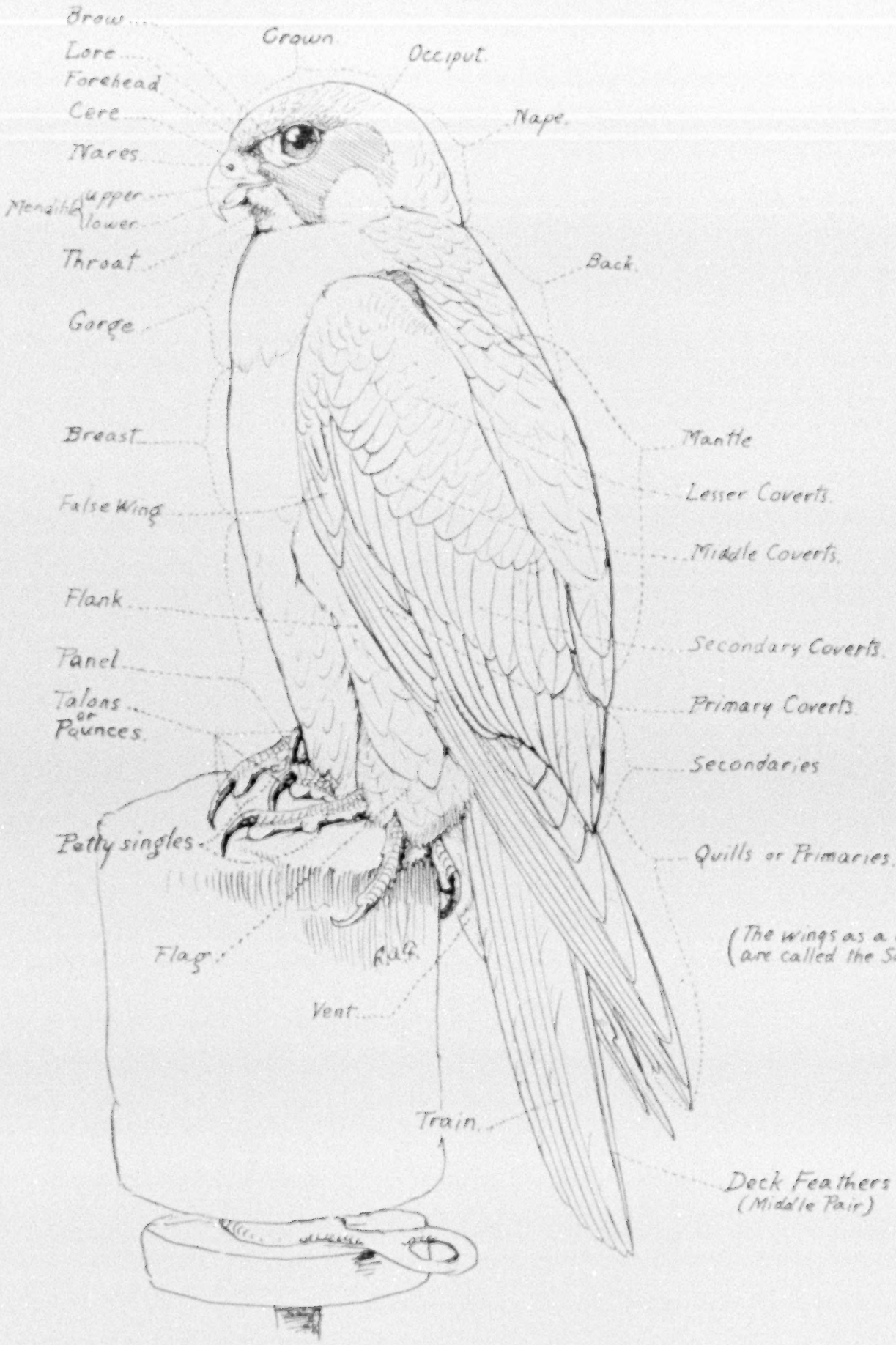


Drawing by Louis Agassiz Fuertes

A CHART GIVING THE FALCONERS' NAMES FOR THE PARTS OF A HAWK

According to the "Boke of St. Albans," published about 1486, the kinds of hawks apparently used by the various elements in English society are given as follows:

Emperor	Eagle.
King	Gerfalcon and tiercil of gerfalcon.
Prince	Falcon gentle and tiercil gentle.
Duke	Rock falcon.
Erle	Peregrine.
Baron	Bastard.
Knight	Sacre and sacret.
Squire	Lanare and lanret.
Lady	Mezlyon (Merlin).
Young Man.	Hobby.
Yeoman	Goshawk.
Poorman	Tezcett.
Priest	Sparrowhawk.
Holywater Clerk	Muskayte.

THE FALCONER'S NAMES FOR HIS HAWKS

Falcons of the same kind differ so in performance and character, according to their experience before being taken in hand, that the falconer has separate names for each type, as follows:

Eyess is the name given to falcons taken from the nest;

Brancher is applied to young that have left the nest, but not the neighborhood of their infancy;

Passagers are birds of the year caught in the autumn migration;

Haggards are adult birds with two or more years of wild experience;

Falcon is strictly the female of any of the larger long-winged hawks, while the male, being nearly a third smaller and lighter in weight, is called the "tiercel" or "tarsel." In strictest usage (now generally ignored) the tiercel is the male of the goshawk, the larger of the short-winged hawks, while the male peregrine is the "light tiercel" or "tiercel-gentle" of Juliet's time. Being so much larger and stronger, the female, or falcon proper, has always received the greatest share of the falconer's regard and labor.

One who trains and hunts long-wings only is the true falconer, while the user of goshawks and sparrow-hawks is technically an Austringer or Ostringer, from the Latin *Astru* (French *Autur*), the generic name of these hawks.

The falconer has a special name for every part of his hawk and for everything he does.

Falcons are brought into subjection to man's will either by being taken from the nest just before they are able to fly or by being caught wild after they are fully grown and self-supporting. Those taken from the nest (eyess hawks) are the ones usually trained over most of Europe. Ordinarily they are much gentler and more easily trained, but lack the dash and style of the wild-caught birds known as "haggards." In India and Africa, however, the eyess is virtually unknown, as the hawks are always trapped adult.

THE BIRD'S TRAINING BEGINS

In the training of eyesses the procedure of the present day differs only slightly from that of the Middle Ages. Modern falconers use very much the same quaint medicines and nostrums and have the same names for falconine troubles as are so picturesquely described by Bert in his "Treatise of Hawks and Hawking," published 300 years ago.

The young hawks are left until nearly all the down has been replaced by brown feathers. Their removal from the nest takes place toward evening, when they are put in a hamper and sent to the falconer. It is highly desirable that as much as possible of their journey be made at night.

Arriving at their destination, they are placed in a roughly made nest and fed on chopped beef and egg, and a little later on fresh birds, rabbit, rat, or squirrel. All food should be tied to a board in a given place, to force the young hawks, which are otherwise free except for the bell and "jess," or leg-strap, to come to the same place for food.

The birds are now "at hack" until they learn to fly, and begin to stoop at live prey on their own account. They should be left entirely alone, and for the present the wilder they become the better; for should they come now to associate food with man's presence, they would at once start clamoring and screaming every time they saw a man—a most undesirable trick.

If properly "hacked," the young birds soon learn to make long flights into the surrounding country, returning at regular intervals to be fed from the shelf or feeding-board. They may be left in this state of virtual freedom for some three weeks,

XUM

Photograph by Guy Bailey

PEREGRINE FALCON AT HER EYRIE ON THE FACE OF A 400-FOOT CLIFF NEAR ITHACA, NEW YORK

A pair of falcons has nested for many years in the same deep gorge. One July day sixteen pigeons were brought to the young hawks by the parent birds.

until they begin to catch prey for themselves. Then they are "caught up." It is time to catch them when they begin to be absent at the regular feeding time.

A bow-net is used in the trapping—a light twine net fastened along one side to a stick bent into a half circle, the free side being pegged down and the ends of the stick swiveled to pegs in the ground.

The net is folded back on the pegged side and a light cord fifty yards long tied to the middle of the bow. The trap is then baited with a tempting morsel, also pegged in place, and the bird is trapped when it comes to feed. The moment it is caught a soft leather hood, open at the back and known as a "rufter," is placed over its eyes and tied on, a swivel and leash tied to the jesses, and it is put down on soft grass with a block to sit on and left for an hour or two to settle down.

Its real "manning" (training to endure the presence of strangers) now begins. It must be carried on the gloved hand for several hours each day, spoken to, and softly stroked until it begins to lose its nervousness and becomes reconciled to the hand as a perch. It may now be fed a little, and when it eats without hesitation the hood may be removed gently, in candle-light, and the meal nearly finished unhooded. The rufter must be replaced before the end of the meal, however, or the hawk will come to associate the hood with the end of its feeding time, and resent it.

When the bird feeds freely by candle-light it may be tried in daylight, and after this is accomplished it should be accustomed to the presence of men, children, dogs, and other creatures ordinarily frightful to it. This does not usually take many days.

MOST OF THE HAWK'S LIFE IS SPENT IN DARKNESS

Now comes the hardest part of the manning—the breaking to the hood.

This is a delicate business, one in which many a fine hawk has been ruined, as a hood-shy hawk, whatever its other virtues, is of no use to its owner. Most of the hawk's life henceforth is spent in the darkness of the hood, which is only removed in the loft or at the moment when it is to be flown at quarry.

THE HAWK IS TAUGHT TO STRIKE AT A SWINGING LURE

Thus far our hawk has been fed always from the hack-board or from the fist; now the lure must be brought out and put into use. This is a padded weight (a horseshoe is excellent) with wings of teal or pigeon attached. It is also provided with strings for attaching food and a long string by which it can be dragged. The hawk is given a bite or two from it, when it is thrown to the ground, where the meal is finished.

For a time now the bird must be fed only from the lure.

As soon as the hawk recognizes the lure immediately and flies to it for food, it is given, hooded, to an assistant and "hooded off" to the falconer, who swings the lure some 200 yards distant. The bird probably will fly at the lure almost at once and in any case will discover and recognize it soon.

The lure is twitched out of sight just as the hawk goes to grasp it. At the second attempt the food tied to the lure should be awarded, and after a few repetitions of this the bird will seldom be far from its master when he has the lure with him.

The bird must now be taught to kill for itself, and a fledgling pigeon is a good subject for this. If properly trained to the lure, there is no danger of the hawk "carrying" (flying off with its quarry), which is a serious fault. After a few "easy" birds, a capable old pigeon may be flown.

The hawk, unless unusually good, will miss on this quarry, but on returning high in the air should be thrown an easy bird; then well fed and petted. It has probably learned from this that to succeed it must be above its quarry. After this is learned, the hawk may be flown at wild game.

This is the merest outline of the training of young hawks. It is an easy task, compared with the manning of haggard or passage hawks, which have for a season at least been accustomed to shunning man as the worst of all evils.

Hawks may be caught anywhere within their range, but by far the most famous place for this exciting (and remunerative) pursuit is in South Brabant, in Holland. Here, near the little village of Valkenswaarde, lies a great open moor, where thousands of passage birds go by in the autumn, followed by the falcons that prey upon them. From time immemorial—certainly well through the Middle Ages—falcons have been trapped and trained here for the nobility of all Europe.

In the heyday of the sport, emissaries from the courts of each little duchy and principality gathered at Valkenswaarde after the trapping and bought for their masters the product of the season's catch.

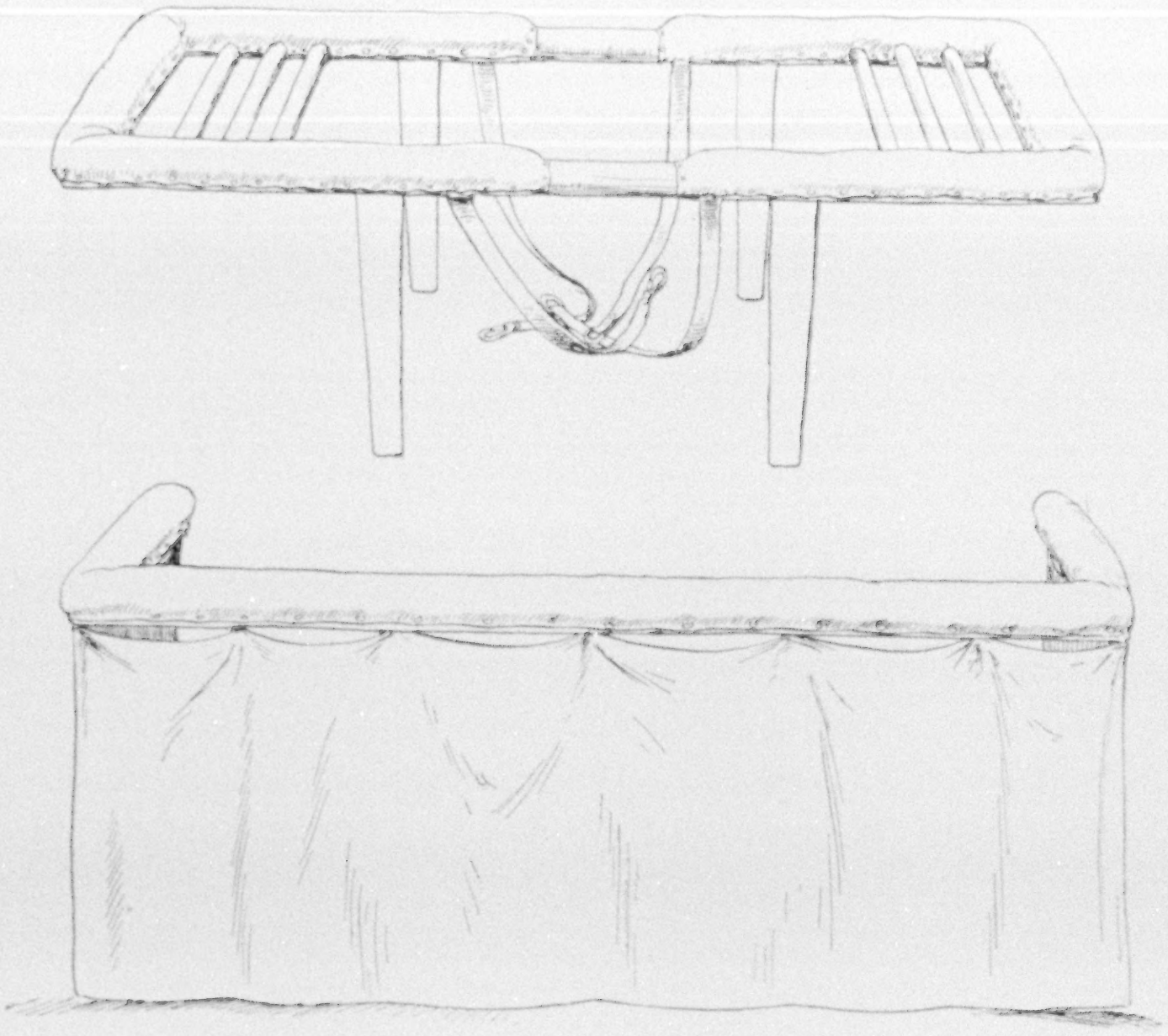
What a picturesque and lively scene these medieval auctions must have been, with knight bidding against knight for the beautiful birds that had been won out of the air and brought into the thralldom of man!

The old cult of falcon catching and training has never completely languished at Valkenswaarde, and the family of Möllens has for many generations led in the industry. Indeed, wherever falconry is practiced the Möllens are known as the most skillful and expert trappers and trainers, and many of the most famous falcons in the history of the sport have come from their able hands.

In capturing the "passage hawks," the trapper conceals himself in a sod hut, from which extend long strings to operate the net and the decoys used to lure the wild hawk within range from afar, after its approach has been heralded by the little telltale "announcer."

THE BUTCHER-BIRD IS THE TRAPPER'S SCOUT

Now, of all birds, perhaps the shrike, or butcher-bird, most cordially hates and fears its big competitor and ogre, the falcon. And the shrike can detect its enemy in the far, far distance much sooner and more infallibly than can man, even with strong glasses. Therefore, the skillful



From a drawing by Louis Agassiz Fuertes

UPPER FIGURE, FIELD CADGE; LOWER FIGURE, SCREEN CADGE, FOR HOUSING FALCONS

The carrier of the cadge was usually a country boy—a tenant of the owner of the hawks. From "cadger" came "codger," a countryman, and doubtless cad and caddie, both typical Scottish derivatives only slightly different in their present-day applications.

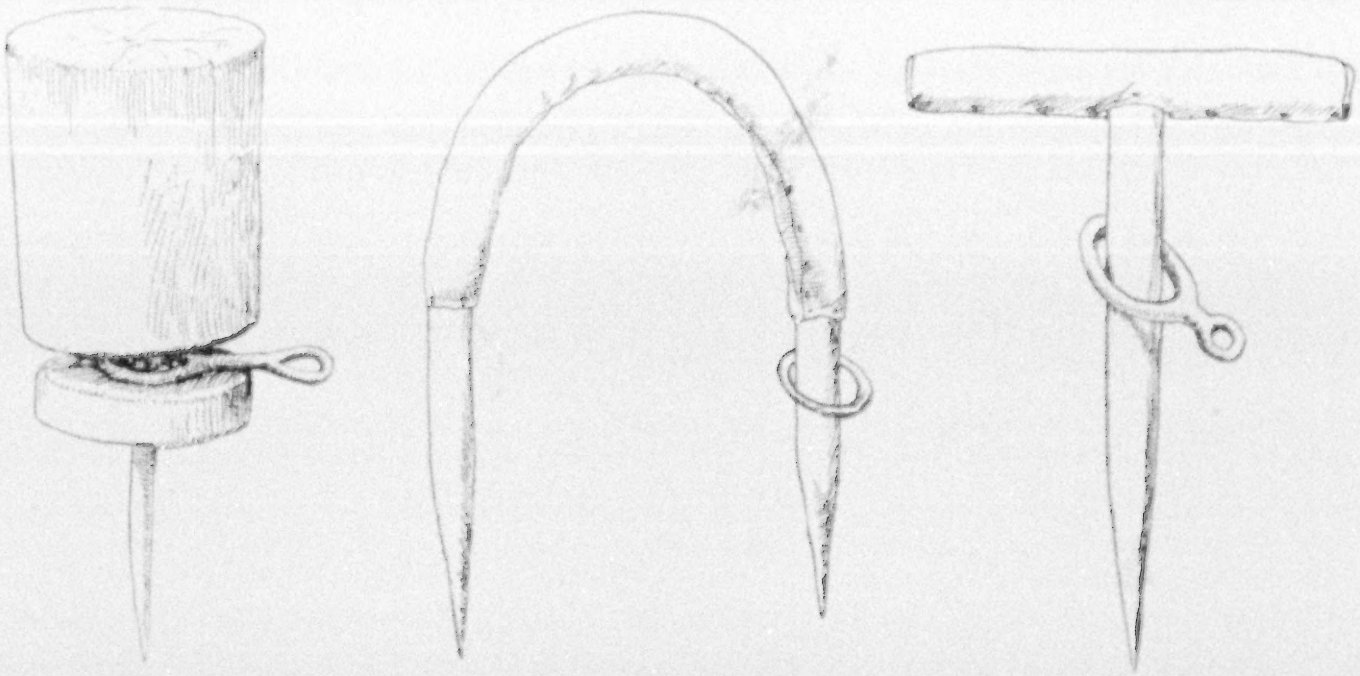
falcon-catcher first traps his shrike and attaches him to a perch on a little sod mound with a retreat into which it may dive to safety when the hawk comes near.

The shrike sits quietly on its perch until it sees a falcon in the distance, when it begins to chatter and scold, getting more and more excited as the falcon approaches, and finally actually "pointing," thus giving the trapper ample time to have everything in readiness.

At the first sign, the trapper retreats into his hut and closes everything except the little peep-window and begins working his tied pigeon and the decoy hawk up and down on the elevated line, to attract the wild falcon's eye.

The actual trap consists of a bow-net set some fifty yards from the hut. Through a ringed peg driven in the middle of the net passes the tether to the bait, a live pigeon which is in retreat in a box a few feet away. When the falcon has come within a hundred yards of the trap the "lure" pigeon is dragged out, flapping its wings. The hawk prepares to stoop. At this moment the "lure" pigeon is dropped and dives to shelter and the "bait" pigeon is drawn out of its box into view. When the hawk has struck, the victim and victor are drawn gently into the exact center of the net, which is then sprung by means of a line from the hut.

The falconer loses no time now. He runs out to the trap, fastens jesses to the



From a drawing by Louis Agassiz Fuertes

BLOCKS AND PERCHES, FOR "WEATHERING" HAWKS

The falcons are all rock-dwellers by nature and are most comfortable when perched on a flat surface; hence blocks are used, with a swivel to prevent the leash from getting tangled up. The short-winged forest hawks, like the Goshawk and Sparrowhawk, have enormous claws, which are greatly in the way on a flat surface, and are therefore weathered on slender "bow" perches. The T-perch is used for eagles.

hawk's legs, and puts a sock over his captive's head and body with as little fuss and excitement as possible—an operation calling for great skill and dexterity. The captured hawk is then hurried to the hut and laid on its back and all is made ready for another attempt.

The training of a haggard hawk is in many respects similar to that of an eyess, but with this vast difference: the eyess, taken young and with no fear or hatred of man, requires simply to be led to do the will of its master, whereas the haggard has to be redeemed by patience and kindness from a state of fierce enmity and suspicion into one of complete docility and submission, and has to unlearn all the teachings of its experience and instinct and learn the will of its new master.

The trainer takes his new hawk to the loft and there removes the sock, replacing it with a soft rufter hood.

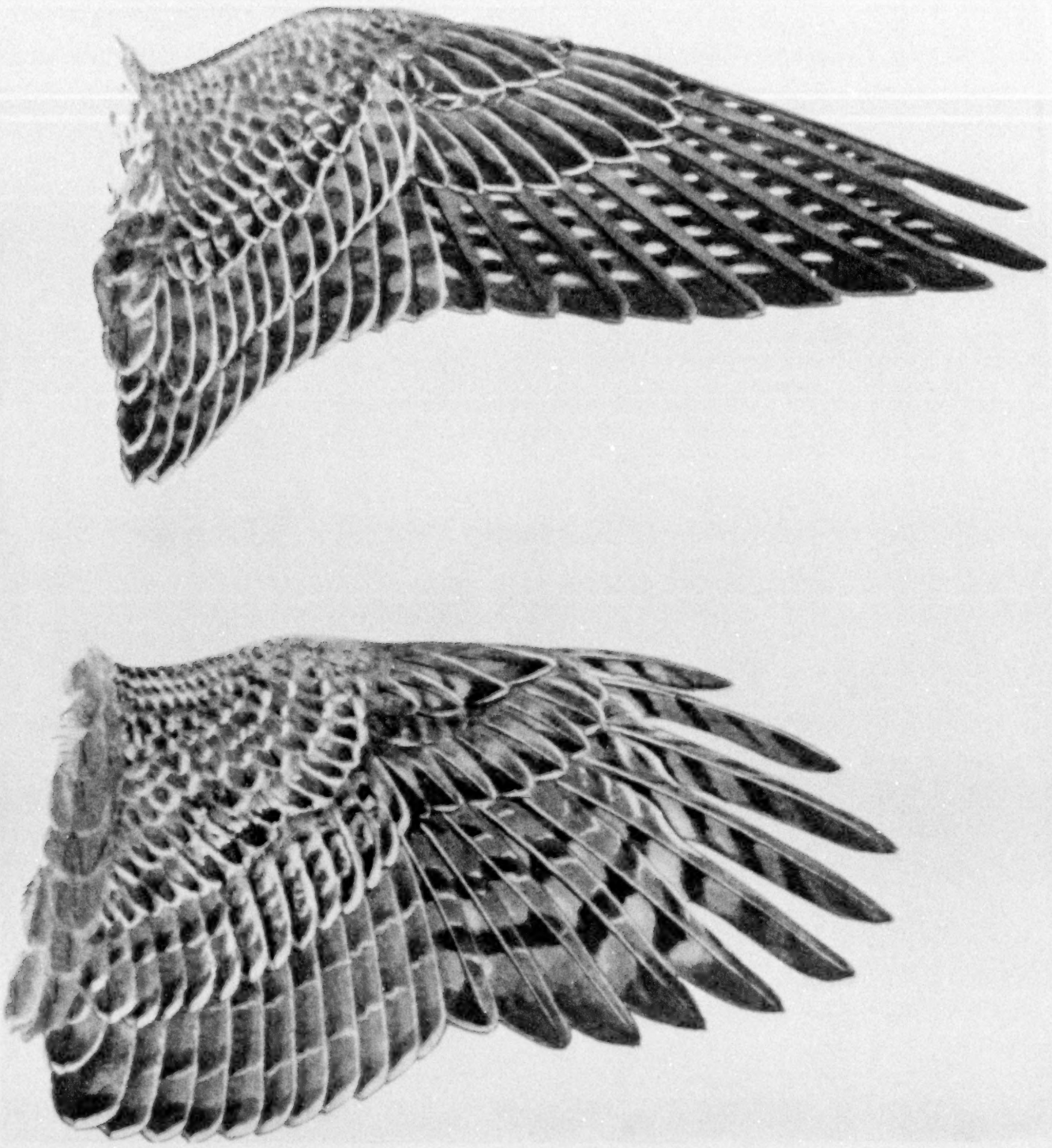
It would take too long to tell in detail all the many difficulties that lie before the falconer; but, with no accidents and much skill, patience, and understanding, a fully adult haggard peregrine may become accustomed to the presence of man and his works in a fortnight. This is accomplished by requiring the newly caught hawk to sit for hours and hours upon the hand and by depriving it of any chance to go to sleep until it is thoroughly reconciled to the new condition. It is then gradually allowed more light and more ease and rewarded with food as its docility progresses.

In some respects it is easier to train the haggard than the eyess to hunt, for the former has long killed for itself, while the food of the eyess has been furnished by its master. Eyesses are usually more tractable and run truer to "form," but the haggard almost invariably has vastly more dash and style than its housebred loft-mate.

The style of action and methods of hunting are so different with the long-winged hawks and their short-winged cousins that they had best be considered separately.

THE "LONG-WINGS" ALWAYS ATTACK IN THE AIR

The "long-wings," or falcons proper, by nature strike their prey in the air, killing it clean by the direct blow they deliver at the end of their "stoop." They battle for position in the air, attaining their "pitch," or position above their



Painting by Louis Agassiz Fuertes

WING OF FALCON, OR LONG-WINGED HAWK (UPPER), AND WING OF GOSHAWK, OR SHORT-WINGED HAWK (LOWER)

The Long-wing is adapted to swift flight in the open, being flat, long, narrow, rigid, and unbroken to the end, only the outer feather being notched, and that only for a short distance. The Short-wing is adapted for precipitate flight in cover, being short, broad, deeply cupped, elastic, and with the "ailerons" deeply notched on at least five feathers.

quarry, by circling or "ringing," and, when sufficiently well placed, dashing down headlong, hitting their quarry a resounding blow that often can be heard a long distance, following it down and striking again if necessary, but never "binding" to it, and never striking quarry that is sitting or on the ground.

Falcons proper are always hunted in open country, where the quarry is either located and flushed with dogs or beaters and the hawk flown from the falconer's wrist, or the birds are trained to "wait on." In the latter case, upon being unhooded and flown, they ring up and up, attain their "pitch," wait for the game to be flushed, and when it is well under way make their terrific stoop.

On large game, like heron, falcons are often flown in "casts," or pairs, and take

turns stooping in rapid succession until the quarry is killed.

In the good old days many kinds of hawks were used, but those most esteemed, because of their size, style, and beauty, were the gerfalcons of the north. Centuries ago the Icelanders caught and trained both old and young birds, and the annual catch sometimes amounted to hundreds.

In general, however, the gerfalcon does not seem to thrive in England or on the Continent. It wilts in the summer and becomes listless, refusing to fly, and finally fading and falling prey to some one of the many ills that beset hawks. This seems to point to a great skill and knowledge on the part of the medieval falconers, who certainly used the gers very extensively and successfully in killing the kite, a most capable hawk, then common all over Britain and Europe.

WHEN THE DESERT FALCON HUNTS THE GAZELLE

The sacre, a "desert falcon," nearly as large and heavy as the gerfalcon, is still used in India for hunting the kite, and probably this is the most thrilling quarry that has ever been used in falconry. The kite is a magnificent flier and spends much time at an altitude of thousands of feet, so that the actual battle often takes place so high as to be almost out of sight.

Another spectacular use to which the sacre is put is in the hunting of gazelles and of bustards. The falconer and his field are mounted on swift horses, and in the gazelle hunt three, five, or more hawks are cast when the quarry is started. It is an exciting chase, full of danger for every one concerned—the riders, because of the chase over rough country; the quarry, because of the number and intrepidity of his assailants; and the hawks, because in their dashing stoops they are frequently impaled upon the horns of their quarry.

The Houbara bustard, a large plover-like bird the size of a turkey, affords a spectacular chase. He does not fly, but, with wings and neck outstretched, runs like a cloud-shadow fleeting over the plain. The hawks, three or more in a cast, pursue and worry their quarry for miles over the desert, only striking the fatal blow when the bustard has become nearly exhausted, as by that time have also such horses as have been able to keep up with the terrific chase.

THE PEREGRINE IS THE FALCON OF FALCONS

The peregrine, falcon of falcons, is not as large or as strong as either the gers or the sacre, but combines, with a hardihood unknown to the "exotics," all the qualities that go to make a good hawk—gentleness, teachability, courage, dash, willingness to "wait on" at a great height, and, most important of all, availability; for, as has been said, the peregrine has a world-wide range, and is therefore obtainable in almost any country where men want to use it. In this article, then, unless specially noted, the peregrine is the subject of the narrative.

In a wild state, were it a common bird anywhere, it would be a very undesirable neighbor, for it preys almost exclusively on birds, and is capable of taking such swift and resourceful game as plover, snipe, and wild-fowl. Its common name in America, the duck-hawk, is well given, the reference being to wild ducks and not the tame bird.

Like many another brigand, the peregrine prefers easy prey to difficult, is in nowise averse to poultry, and is particularly fond of domestic pigeons. A pair whose eyrie I watched on a 400-foot cliff near my home one July day had three young on the wing. During the middle of the day there was little activity and all the birds sat quietly pluming and resting; but for the first three hours in the morning and the last three in the afternoon, one old bird or the other returned about every twenty minutes with a pigeon. On that one day sixteen pigeons were brought to the young.

Of course, this was more than they could eat entirely, and much more per capita than grown birds would consume, but where an adult hawk will keep in very fine condition on half a pound of fresh game a day, a growing fledgling requires above its own weight daily of animal food in order to maintain its miraculous growth and the great physical effort of producing an entire coat of feathers.

There are many recorded instances of

the wild peregrine's adaptability to the easy life of great cities, where congenial nesting and roosting places are found in the belfries, towers, and lofts of the public buildings and pigeons in abundance are available. For many winters an old peregrine appeared in Washington, haunting the Post-Office Department building tower as a lookout, sallying forth whenever it was hungry, making a clean kill on pigeon, and returning to the post-office roof to plume and eat its prey. A member of the Biological Survey went on top of the building and collected a large number of leg-rings from carcasses that had been left by this bold and capable brigand.

A fine old female peregrine I once took from Pajaro Island, in Mexico, was living on white ibis from a convenient rookery, and her lookout tree was well surrounded by the bleached and weathered carcasses of her victims. I fancy her demise was a welcome event on the island.

Many stirring accounts are current of the courage and tenacity of purpose these hawks possess, but one of the most striking is of an eyess falcon belonging to a Major Fisher, which was flown at a woodcock near Loch Eil. Both birds mounted at once, higher and higher, until they were entirely lost to view, even with powerful glasses. After considerable time, however, a tiny speck was seen falling out of the sky, and the woodcock, closely followed by the thunderbolt in feathers that had struck him, fell toward the very patch of fern from which he had been flushed. Before hitting the ground, however, the hawk had again overtaken her victim and struck him stone dead in air. After so long a chase the falcon was well fed up, and, so far as she was concerned, her master wisely "called it a day."

The "Old Hawking Club," organized in England in 1864, always maintained a fine cadge of hawks and kept careful records of individual performances. Between August 12 and September 14 one year, the club's prize bird, "Parachute," a two-year-old eyess falcon, killed 57 grouse, 76 partridges, 5 pheasants, 3 hares, and five birds of miscellaneous species.

"General," a falcon belonging to the Duke of Leeds, killed in 1832 129 out of 132 flights, mostly at partridges. "Vesta" was flown in Scotland in nine successive years, averaging 33 grouse a season. This is an unusually long life of activity.

A glance down the records of famous clubs and of private owners reveals many interesting and romantic names, such as the falcons "Lady Jane Grey," "Empress," "Buccaneer," "Black Lady," "Comet," "Destiny," and "Will o' the Wisp"; tiercels "Druid," "Butcherboy," "Mosstrooper," "Vanquisher"; merlins "Tagrag," "She," "Ruy Lopez"; sparrowhawks "Blanche," "Lady Macbeth," and "Faerie"; goshawks "Enid," "Isault," "Geraint," "Tostin," "Sir Tristram," and for variety "Gaiety Gal" and, grimmest and truest of all, "Shadow o' Death."

A FAMOUS FLIGHT BY "BOIS-LE-DUC"

"Bois-le-duc" was a haggard falcon of fine qualities, and the following, quoted from Lascelles, gives us a lively picture of a rook flight by this famous hawk:

"We take up our position behind a stack to wait for a rook passing on his way from the rookery in the valley to the sheepfold on the hill. Presently we see one coming, toiling slowly over the shoulder of the down.

"Shall we fly one of the young falcons lately entered and coming on so well, or shall it be the old heroine of a hundred flights, victress over more than double that number of rooks, that flies now her fourth season with all the vigor and dash she displayed in the blinding snowstorms and heavy gales of her first year?

"A hundred or two yards is far enough for a slip with a young hawk, but with a real good one a quarter of mile is not too far, while many and many a time, if the wind be right for her, the old hawk has been slipped at rooks a fair half mile away.

"It looks as if this slip would be too far for a young hawk, so the handsome old falcon is taken on hand, to the delight of the whole field, not one of whom, however large it may be, but will stay out 'just one half-hour more' when it is announced that it is the turn of old 'Bois-le-duc' to fly at the next chance that occurs.

XUM

FALCONS WEATHERING

Every pleasant day the falcons are put out on their blocks in the open air, unhooded, for an hour or two, where they preen and plume themselves, and get their fill of fresh air. It also keeps them good natured and contented in each other's presence. The birds shown here are (1) Greenland Gerfalcon, (2) Iceland Gerfalcon, (3) European Gerfalcon, (4) Goshawk, (5) Haggard Peregrine, Tiercel (6) Red or "Soar" Tiercel Peregrine, (7 and 8) Red or "Soar" Peregrine Falcon, (9) Tiercel Peregrine "rousing."

A FAIR HIT: GERFALCON STRIKING HERON

When Knighthood was in Flower the favorite game of every overlord (who alone was entitled to use the Gerfalcon) was the stately heron. Modern falconers seem unable to adapt these splendid northern hawks to present conditions, depending almost wholly upon the native peregrine. But in the fourteenth century a gerfalcon was indeed a kingly gift, and one often employed when the goodwill of a near or distant potentate was particularly desirable. In attacking, the gerfalcon climbs above the heron then "stoops" with great force at her quarry. There is no truth in the legend that the heron, as a means of defense, sometimes impales the descending enemy upon its dagger-like beak.

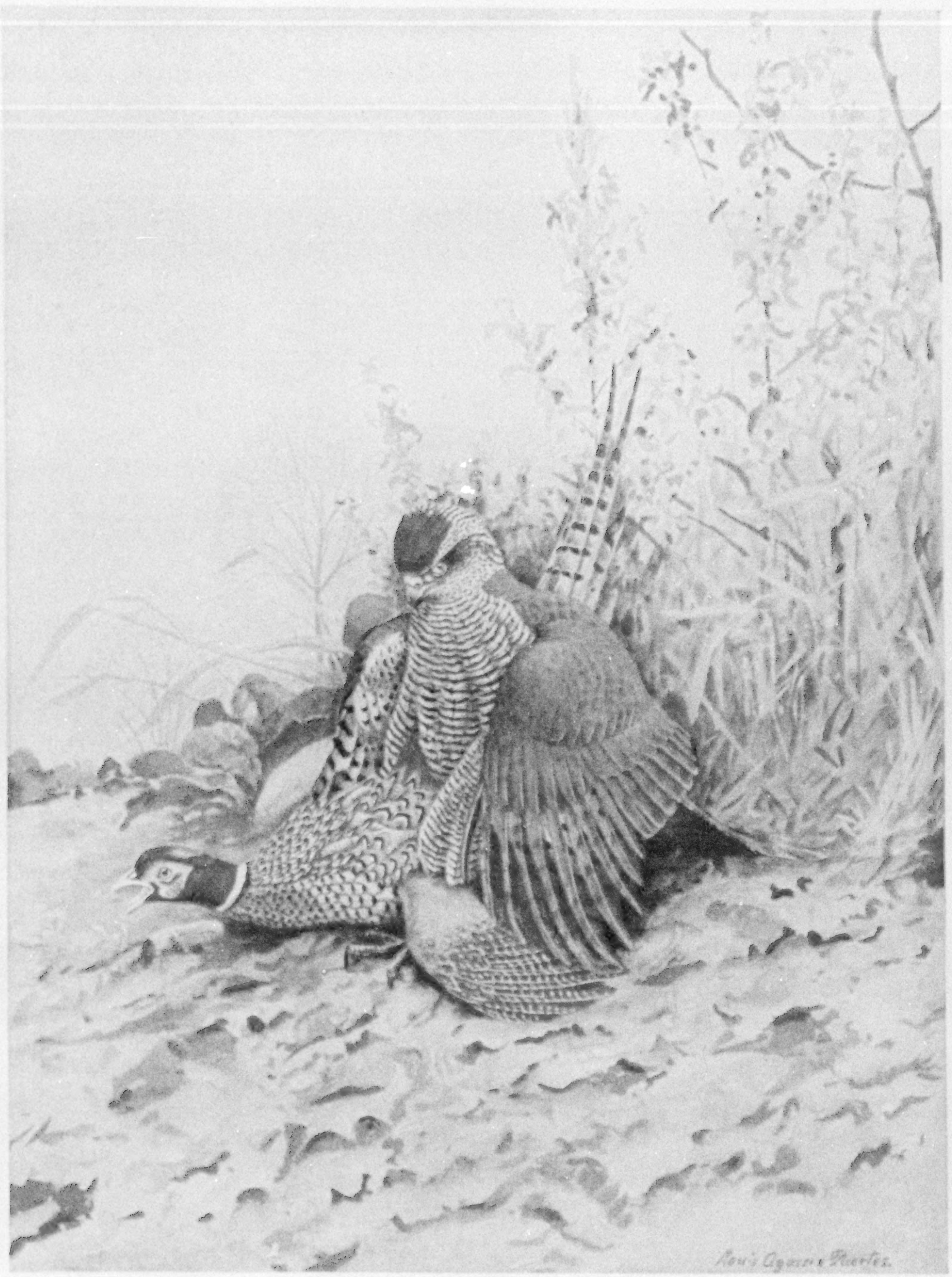
TIERCEL GENTLE: A HIT ON GROUSE

Scotland must receive the credit for perpetuating the "Noble Art" when it had languished over the rest of western Europe, and no quarry is better suited to the capacities of the Peregrine, or "Gentle Falcon," than the Scotch red grouse. But the "gentle" part is forgotten when the hawk makes its thunderbolt assault, diving on its victim from a height or "pitch" of hundreds of feet, usually killing it clean with a single resounding blow of the half-closed fist. A good falcon will never seize or "truss" its quarry.

The term tiercel (meaning the male of various species of falcon) is derived from the Latin *tertius*, according to some because every third bird in the nest is supposed to be a male; according to others because the male is supposed to be a third smaller than the female.

GOSHAWKS: AN ADULT TIERCEL (MALE) AND A YOUNG FEMALE

These are the fiercest and most competent killers of all, and therefore used principally by the "yeomanry" as meat getters. They are in "red" plumage for the first two years of their life, afterward becoming slaty-gray above and barred below. They require careful watching in the mews (the buildings where the hawks are kept), lest they break loose, when they will go systematically about killing every other bird in the loft. They hunt on or near the ground, and, unlike the falcon, come to earth with their quarry. Among all hawks, the female is larger and more powerful than the male.



GOSHAWK STRIKING PHEASANT

Unlike the true falcons, the short-winged Goshawk hunts ground-haunting quarry, and trusses (holds) to its victim till the latter ceases to struggle, no matter how fierce and rough the tussle may be. It kills by the vice-like squeeze of its piercing talons, instead of by the terrific blow of the half-open foot, as do the true falcons. "Red Queen," a famous goshawk of the "Old Hawking Club," had an authentic record of sixteen hares out of seventeen struck in a single morning.

HAWKING IN THE CAUCASUS

All through the Near East, particularly in Georgia and Daghestan, hawks are still used as game-getters. Goshawks are principally employed, being the most prolific killers, and the rough nature of the country making it impossible to follow the long flights of the true falcons. The quarry, mostly pheasant, partridge and hare, is located by dogs, and the goshawk flown from the hunter's wrist as the game is flushed.

A HAWKING PARTY IN ELIZABETHAN ENGLAND

When firearms came into general use the splendid sport of Falconry, as a general practice, received its death blow. But in Shakespeare's day it was at its height, and the literature of Mediæval England is full of spirited references to "the Sport of Kings." The colorful and picturesque costume of that day must have lent great charm to the scene when prince and princess, knight and lady, squire and dame rode forth, hawk on fist, to fly their favorites at rook or heron.

THE START: ARABS SETTING OUT WITH FALCONS TO COURSE GAZELLES

It is difficult to tell just when hawking began. The Arabs, perhaps as early as any other people, trained certain hawks to course the swift desert game. In coursing gazelles three, five or more hawks are used, and the aid of dogs is required for the actual kill, the hawks worrying and bewildering the game until the dogs can catch up. These hawks are always fed from the eye-sockets of a calf's head, and naturally turn to this spot in their living quarry. There is great danger that the hawks may be impaled on the horns of the gazelle.

XUM

HUNTING THE BUSTARD WITH FALCONS IN NORTHERN AFRICA

This is one of the most thrilling of all uses of the falcon, for the chase often continues for many miles over the rough desert, where only the stanchest horse can follow. The size and stamina of the quarry, combined with the habit of fleet running instead of flying, make it very hard as well as dangerous for the little lanner falcon to kill, as there is so little space to turn away from the ground after the stroke.

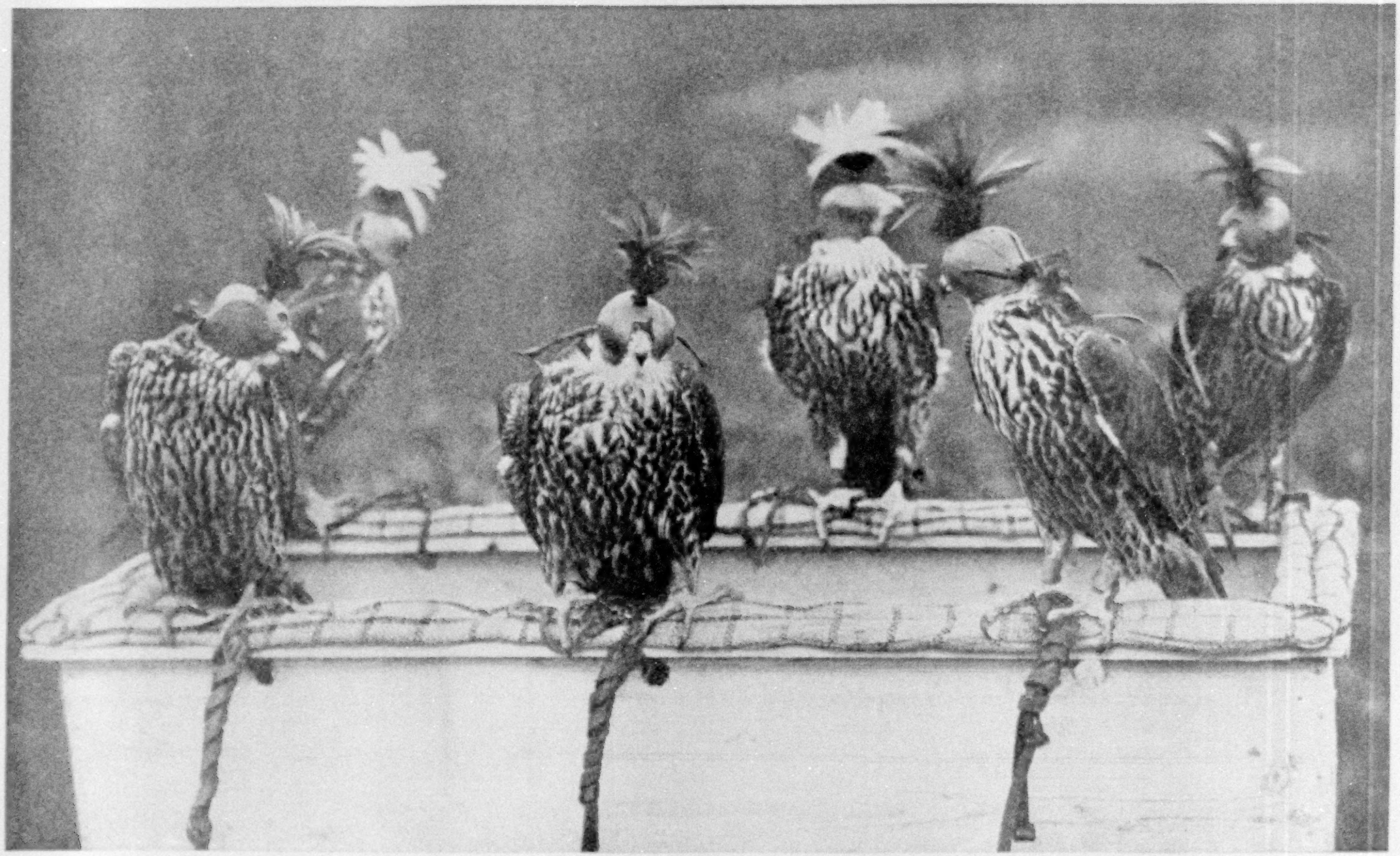
A SPARROWHAWK MAKING A TRY FOR A BLACKBIRD

Although too small and slight for "regular" game, the European Sparrowhawk, which closely resembles our Sharp-shin (see color plate XVI), is uncommonly fierce and courageous, and makes spirited dashes at such quarry as starlings and blackbirds. It is a hedgerow hunter, depending for success upon the intrepidity of its onslaught and the pertinacity with which it follows its victim. It will even run through thick cover after skulking quarry.

Photograph by L. Ollivier (Paris)

AN ALGERIAN FALCONER: BISKRA, NORTH AFRICA

Falconry had its rise in man's early necessity in man's birthplace, Central Asia, where it has thrived almost without interruption ever since. The sport has from immemorial time been followed in India and Northern Africa.



Photograph from Louis Agassiz Fuertes

THREE CAST OF FALCONS, ON THE CADGE, HOODED AND READY FOR A JOURNEY

Marco Polo describes the hunt of a ruler of Manchuria in which about 10,000 people were engaged, and over a thousand trained falcons were employed. Everything was done to insure the sumptuous ease of the great man, who was not disturbed until the quarry was overhead, when he slipped his favorite falcon and the hunt was on. Modern falconers insist on seeing all the fun, from the flushing of the game to the stoop and kill.

XUM

Photograph from Louis Agassiz Fuertes

TRAPPING FALCONS AT VALKENSWAARDE, HOLLAND

Here, since the middle ages, falcons have been caught for use all over Europe. The outfit consists of the trapper's blind, from which run four lines: one to each pole, by which a decoy hawk and a "lure" pigeon are brought out of their sod retreats into involuntary action; the third to the "bait" pigeon, bringing it from its box into the open trap-nest; and the fourth to spring the net when the wild hawk has struck. On the sod retreat toward the right sits the captive shrike, which announces the advent of the hawk.

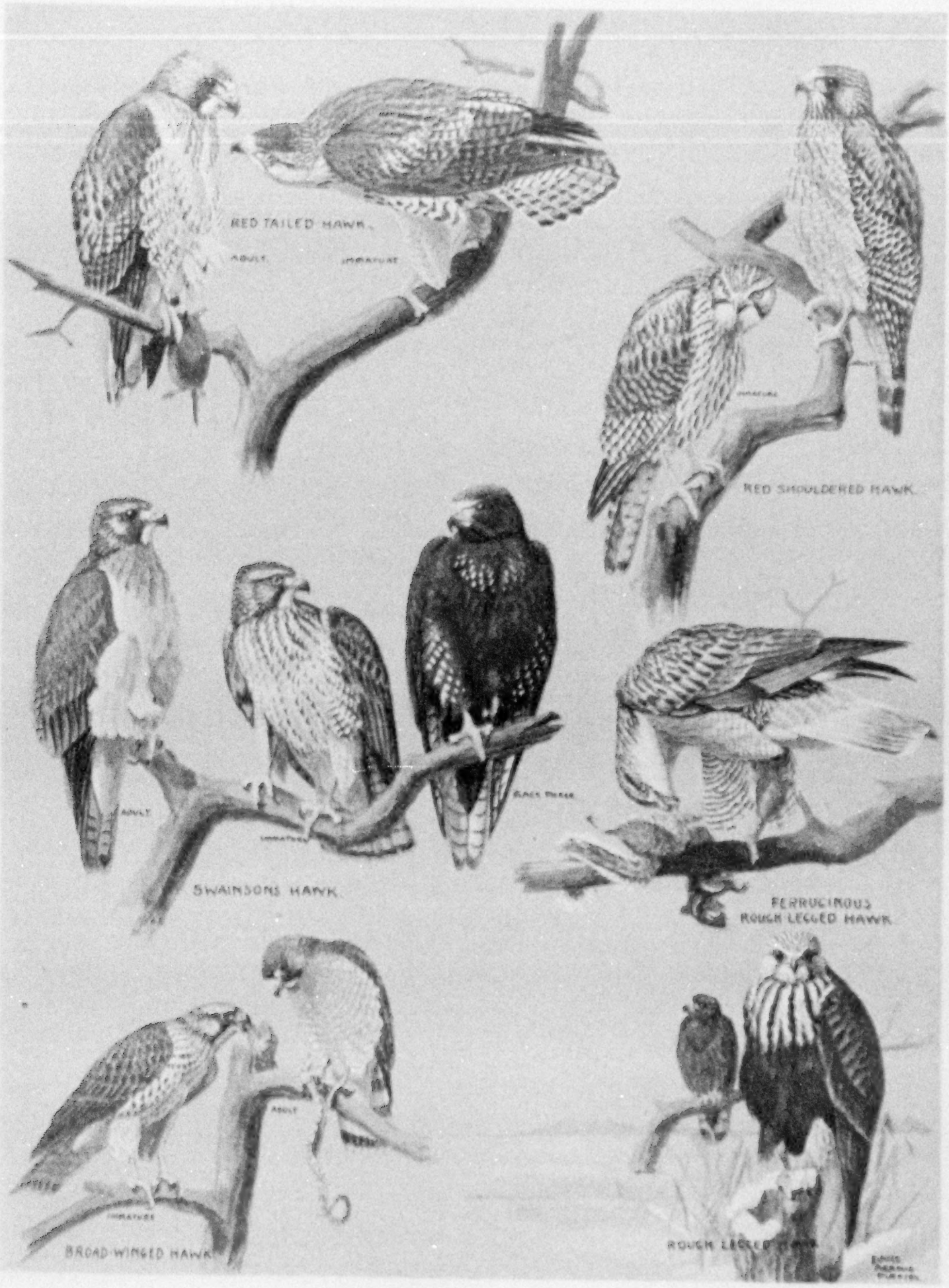
A CAST OF FALCONS ON THE WRIST: HOLLAND

The birds are carried hooded until the game is started. Then the hood is doffed, the leash slipped from the swivel and the falcons cast off, singly, unless the game is large and powerful. The rest lies with the birds.

Photograph from Louis Agassiz Fuertes

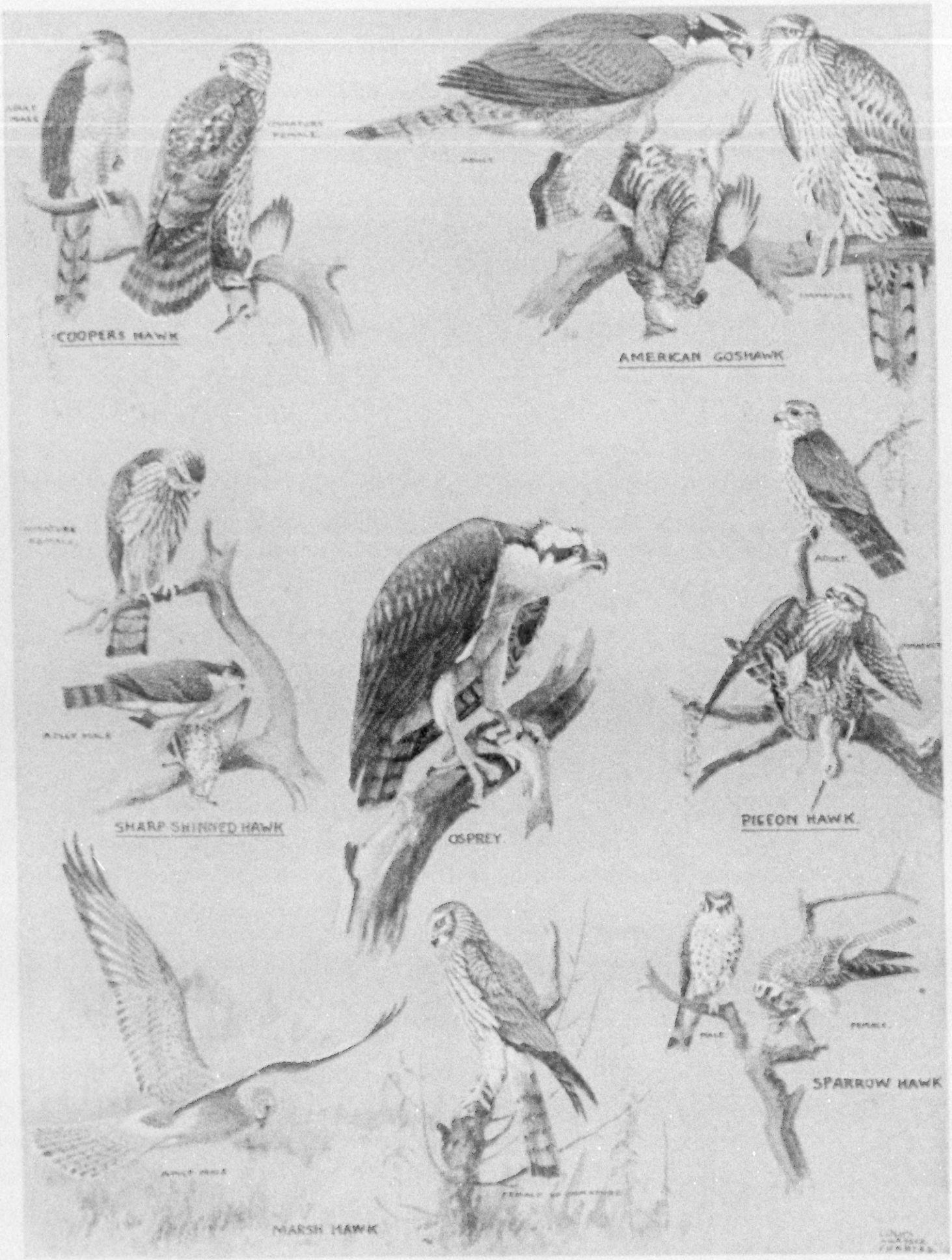
FALCONER TAKING HAGGARD PEREGRINE FROM THE BOW-NET, LURED THITHER BY THE BAIT PIGEON

Nearby is the "sock" into which the hawk will be thrust, while jesses and bell are attached to the legs. Much skill and dexterity are required, for an outraged falcon is no easy thing to handle, and can inflict severe punishment with its great needle-sharp talons. The beak, though a capable weapon, is not used, even in self-defense.



HAWKS THAT ARE THE FRIENDS OF MAN

Large, conspicuous hawks are all of great economic value, being the principal natural check on the hordes of noxious rodents that, if unmolested, would soon render agriculture unprofitable. The large soaring, circling hawks of the open country are not the ones that molest the farmer's poultry, but *are* the ones that hold in check the field-mice, gophers, ground-squirrels, mole-crickets and grasshoppers that annually cost the country many millions of dollars through their depredations on crops, orchards and forage.



ONLY FOUR MEMBERS OF THE HAWK FAMILY ARE OUR ENEMIES

The four hawks whose names are underscored are the ones that give a bad name to the whole hawk family. Of these the Cooper's Hawk is most important because commonest and most widely distributed. The Goshawk, restricted to the Northern wooded region, is terribly destructive to game birds and to poultry. The Sharp-shin, an inveterate bird-killer, is too small to molest poultry, except chicks a few days old. The Pigeon Hawk is not important, being quite rare.

"All is hushed as the rook, a single bird, presumably a strong old cock, comes slowly up. He passes us and is going nicely on when something about the party awakens his suspicions and he gives a sudden swerve that in one second takes him about 150 yards off on a side wind.

"We are not to be done this way, though, and in a moment the head of our party, with falcon on hand, dashes out at a brisk gallop down wind of the rook, which hastens up on wind. But a hundred yards or so is no matter to us with this hawk, and the moment we are fairly down wind of him the old hawk is unhooded and flung off; and the falcon is in hot pursuit of her quarry, rising with each stroke of her powerful wings till she seems to shoot upward like an arrow from the bow.

"The rook has seen her, and is making his way upward at no mean rate; but the pace of the falcon is too much for him, and ere long she is above him. Poising herself for a moment, she comes, with one terrible perpendicular stoop, straight at him.

"It would seem as though nothing could escape; but our rook is equal to the occasion, and with a clever shift he has dodged her attack by a good yard or more.

"WELL DONE, ROOK"

"'Well done, rook!' but there is clearly now no safety for him in the air, for the falcon has shot up again, with the impetus of her stoop, to a height scarcely inferior to that from which she descended; so, turning his tail to the wind, he makes all possible haste to a small patch of thorns that promises a temporary shelter, having, however, on the way to evade two similar stoops from the hawk, almost as fine as the first.

"Alas for friend rook! On reaching the covert he finds it already occupied by the enemy, in the shape of the excited field, who soon drive him with halloo and crack of whip from his shelter, and compel him again to seek the open. The falcon has, however, strayed a little away; so he starts with might and main to ring, in spiral curves, into the very clouds.

"After him starts the hawk, but soon finds that really good rook, such as this is, can mount nearly as fast as she can.

"Up, up they go, gradually becoming smaller and smaller. Ring above ring does the falcon make, yet without getting above him, till, apparently determined to gain the victory, she starts off into the wind to make one tremendous circle that shall attain her object.

"Steadily into the wind she goes, the rook striving to follow her example, and appearing from below to be flying after the hawk. At length, as she almost completes the outer circumference of her circle, the rook, perhaps feeling his powers exhausted, turns down wind, and, at a great height, makes off as fast as he can go.

"Surely the flight is over, for the falcon is still working away, head to the wind, as hard as she can—in fact, the two birds are flying in opposite directions, half a mile apart. 'Not a bit of it,' say the initiated, who are off down wind as fast as they can ride.

A MAGNIFICENT STOOP, AND VICTORY!

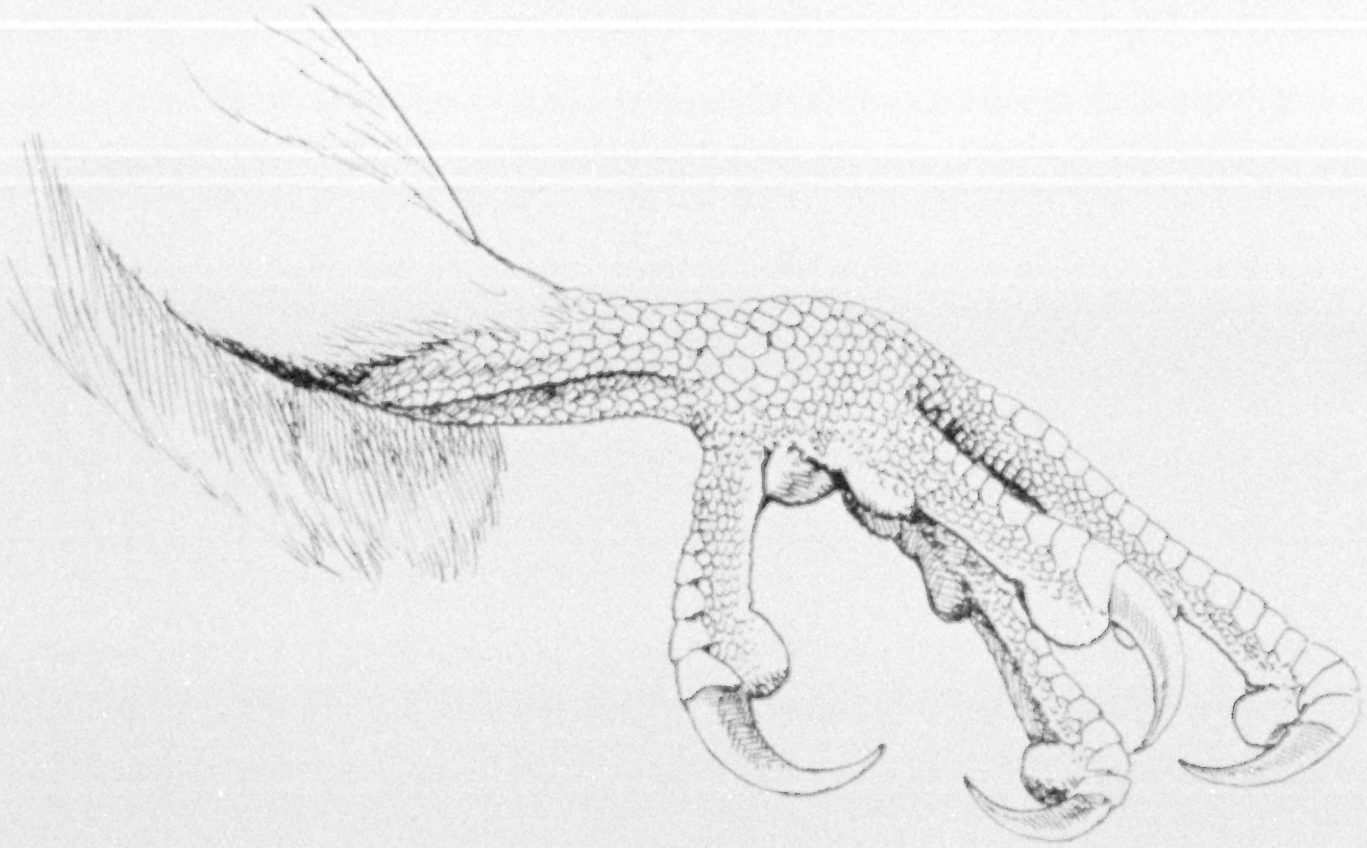
"In another moment you see the falcon come round, and though at such a height she looks no bigger than a swallow, you can see that she is far above the rook, while her pace, slightly descending as she is, is almost that of a bullet. So thinks her quarry, apparently; for, shutting his wings, he tries to drop like a stone into a clump of trees now nearly beneath him.

"Swiftly as he drops, there is a swifter behind him, and down from that terrific height comes the falcon like a thunderbolt. Lord, what a stoop!

"By the powers, she has missed! And now surely he must escape.

"But no. Shooting upward like a rocket, the old falcon puts in one more straight, swift stoop, and the rook is taken just as he enters the sanctuary which he has had his eyes on from the first. Whoo-who-op! A grand ring! a magnificent stoop! a splendid flight! Bravo, 'Bois-le-duc!'"

Among the smaller falcons the merlin, hobby, and kestrel are the only ones now used, and, indeed, the kestrel, being largely a locust and mouse feeder, seems to be rather beyond the skill of the modern trainer, though there are abundant proofs that it was used in medieval times. This is a beautiful and gentle species and



Drawing by Louis Agassiz Fuertes

THE FALCON'S FIST

Falcons kill their prey in full flight, by a terrific blow with the half-closed foot, returning after the strike to pick up the victim (see Color Plate II).

it is a pity it cannot be more profitably used.

TRAINING THE SHORT-WINGED HAWKS

Thus far nothing has been said of the training and hunting of the two short-winged hawks, the goshawk and the sparrowhawk.

Just as the falcons, with their long, narrow wings and compact bodies, are adapted to the chase in the open, with wide maneuvers and great stoops through unbroken space, so these rangy, slim-legged birds, with their short, "broad-fingered" wings and long, sweeping train, are beautifully adapted to work in the tangles and forests, where they naturally live.

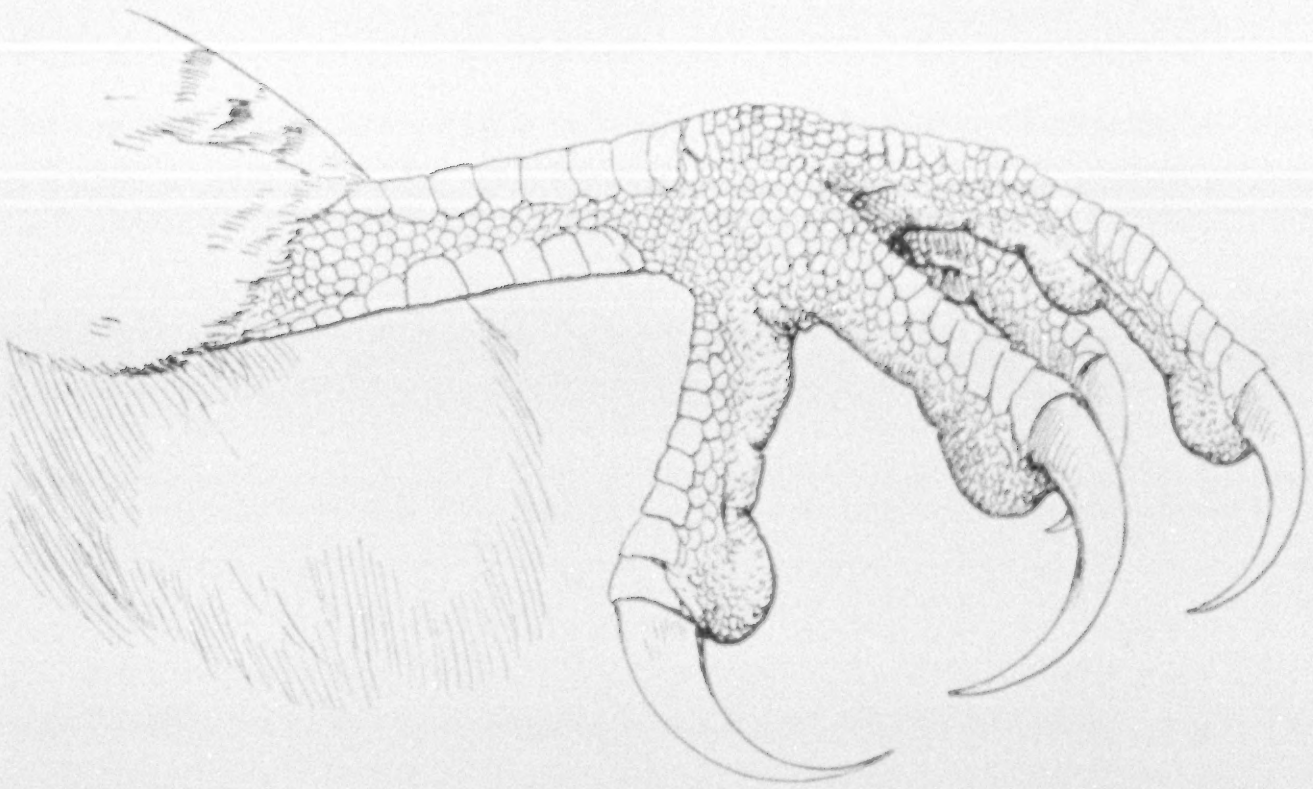
These birds seldom come out into open country unless there is some tempting poultry yard or game preserve where a quick sally is assured of its reward. When such a larder is discovered, however, little peace comes to the owner until the marauder has been brought to earth, for it will take its daily toll until the yard or cover is depleted.

Goshawks and horned owls are generally to be feared in cold winters on all extensive game covers in this country, and they make sad havoc with the work of years when once they infest such a place (see text, page 461).

The goshawk is a very different creature from the falcon, and by its nature and style of hunting is fitted for entirely different work; for the goshawk does not strike its prey in air and return to it after the turn, but pursues it and binds to it at once, whether in air or, as it prefers, on the ground. These hawks have a curious habit, too, of covering their quarry with their outstretched wings and tail until it ceases to struggle.

THE GOSHAWK'S FEET ARE ENGINES OF DEATH

The feet of the goshawk are veritable engines of death, with enormous talons and great strength. Whereas a falcon's foot is more like a fist to deliver a terrible blow, the short-wing's feet are like great ice-tongs with semicircular claws nearly an inch long, which enter the very vitals of the quarry and kill as tough a creature as a rat or a hare in a few seconds and take the life of any bird almost instantly (see drawings on this and the opposite page).



Drawing by Louis Agassiz Fuertes

DRAWING OF THE FOOT OF A GOSHAWK (NATURAL SIZE)

The Goshawk kills its prey by clutching, and driving its great talons into its victim's vitals, not releasing its hold until the quarry ceases to struggle (see Color Plate V and text, page 458).

These hawks are worked along hedgerows or in woods, only being used in open ground on hares, rabbits, or pheasants. In thick cover they perch hard by, watching for the instant the quarry may be put out by dogs or beaters.

The short-wings are very much more intent on their game than are the falcons, and even in a wild state have been known to chase fowls into the farmer's kitchen and kill there. Dr. Fisher records an amusing instance in which a goshawk dashed in and seized a fowl which had that instant been killed by a farmer, dragging it only a few rods before starting to deplume it. In another case, a hawk pursued its quarry through the kitchen of a farm-house into a bedroom and there made its kill under the bed!

While the strikes of this hawk are very hard and impetuous, they are usually short, and do not result in the exhaustion that follows a good flight by a falcon. Thus they may be flown many times in a day, and there is the record of old "Gaiety Gal," who was flown at 17 hares in one morning, trussing to all and killing clean all but the last, which, being exceptionally strong and the hawk naturally weary, got away after a struggle. Sir Henry Boynton's "Red Queen" killed 24 rabbits in one day.

There is something almost devilish about the fury of a goshawk's strike. Her yellow or orange eye, the pupil concentrated to a cold point, fairly burns with ferocity, and the clutch of her awful foot is such that virtually no amount of twisting or somersaulting on the part of the hare or rabbit can dislodge the great piercing hooks.

As an example of the goshawk's single-mindedness when in pursuit of quarry, Lascelles tells of one which drove impetuously downhill at a rabbit. As the quarry leaped four feet in the air to avoid the stroke which grazed it, the hawk turned over and caught it from underneath while in the air, "rolling afterward down a steep bank head over heels, but never leaving go her hold."

"It is not uncommon," continues this observer, "to see a rabbit captured at the mouth of a burrow, and hawk and all disappear under ground; but when she is lifted out, however much she is knocked about, the rabbit is in her foot."

THE SPARROWHAWK HAS MANY ADMIRERS

The sparrowhawk is reclaimed and trained in much the same manner as other hawks, and her tactics are almost exactly those of her big relative. No

whit less fierce and bloodthirsty is she, and the blackbird or starling that has put into a hedgerow or thicket has small chance of eluding the cold eye that is quietly watching from some near-by perch for the first stir.

The sparrowhawk has many enthusiastic supporters, and for many reasons is the best fitted for the amateur falconer, as these birds are not costly and small loss attends failure. They may be used on almost all small game and brush birds, and have been used with success on partridge. In England, however, the sparrowhawk is used chiefly on blackbirds and starlings, and while it is in a way small sport, the ingenuity of the quarry and the catlike agility of the little hawk give spice to the chase.

Here, even the tiny male or "muskett" is of use. The chase is over if the hawk makes a true strike; but the quarry is resourceful and nimble and it is frequently very difficult to make the pursued bird fly if it has once succeeded in reaching cover.

I once saw close at hand the tactics of a house-sparrow, which flew chattering within a few inches of my head, hotly pursued by a male sharp-shin, the American miniature of the sparrowhawk. The sparrow flew directly into the densest twiggery of an old lilac clump, and there continued to flutter and chatter. Almost instantly the hawk, wings and tail thrown back and lean, sharp talons extended, struck the bush with a thwack, trying to drive through to the terrified (but still resourceful) sparrow. Failing, the hawk, entirely ignoring me, turned back again on its course, flew past me to a distance of perhaps a hundred feet, wheeled, and again drove at the bush as if thrown from a catapult.

This occurred four times in rapid succession before the hawk decided it was of no use and continued on its way philosophically. After a very short time the sparrow, too, resumed its normal state of mind and joined a group of others in the road near by.

From the foregoing it will be seen that falconry had its rise through man's early necessity, in man's birthplace, central Asia, where it has thrived almost without interruption ever since; that later it became the sport of the more privileged classes, attained a high pitch of popularity in medieval times, and has since fallen, as the result of many contributing causes, to a point where it is costly and extremely difficult to maintain.

It is not too much to suppose, however, that there will always be those who have the means and the desire to keep alive one of the most beautiful and romantic sports that man has ever devised. Fortunately, there is plenty of colorful literature on the subject from the days of chivalry and there are several practical books by later-day devotees of the art.

It is, perhaps, not too much to venture the belief that now, after the war that has so completely occupied the minds and lives of the civilized world is over, we shall swing back to some of the less serious pursuits that we formerly enjoyed, and that among these falconry may undergo a real revival.

AMERICAN BIRDS OF PREY—A REVIEW OF THEIR VALUE

IT IS not always easy to cast up an exact balance to show at a glance just what value we should attach to any given bird or animal, and the difficulty becomes much greater as the element of prejudice or chance personal observation complicates the verdict which dispassionate research determines for any given species.

The prejudice against all birds of prey is so general that it is well nigh impossible to convince any one who has once seen a hawk steal a chicken that only a few kinds have this habit, and that all the rest deserve the most careful protection. This fact has been admirably set forth, however, in that now rare work, published in 1893 by the Bureau of Biological Survey, Dr. A. K. Fisher's "Hawks and Owls of the United States." Much of the specific information in the present article has been drawn from that authoritative source.

For many years the field agents of the

Biological Survey have been instructed to send to the Bureau the crops and stomachs of all the birds and animals they collect, that their food habits may be studied without favor or prejudice. As a result of this study, the balance in favor of the American birds of prey has been shown to be an overwhelming one. No similar natural check exists against the hordes of destructive and rapidly multiplying field-mice, gophers, wood-rats, ground-squirrels, and moles. Many persecuted species of birds feed their ravenous young almost exclusively on those pests of our grazing and grain regions, the grasshoppers, locusts, and mole-crickets.

It cannot be denied, nor is it my intention to palliate the charge, that certain hawks and owls are villainous destroyers of poultry, game, and beneficial birds. Let it be said here in parentheses, however, that man's own self-introduced pet, the cat, undoubtedly kills as many little chickens and vastly more beneficial and desirable birds than do all the birds of prey in America, many times over.

Virtually all the damage of which the opponents of our birds of prey complain is done by five kinds of hawk and one owl. The number of birds and fowls killed by the remaining eleven common hawks and five owls is so insignificant as to be comparatively of no importance.

The purpose of this study is not to cover in detail the whole performance of the entire list of American raptorial birds, and not more than two-thirds of the species are mentioned. Those that are so rare or that dwell in such remote or uninhabitable regions as seldom to fall under observation are omitted, as the family is, at best, a difficult one to describe or treat in a simple and lucid way. This is, of course, the reason for the present confusion in the minds of all except real students of ornithology. Still, the injustice and folly of persecuting a valuable family of birds for the misdeeds of less than a fourth of its number is so preposterous that another attempt to clear the situation is justifiable.

THE DESTRUCTIVE SPECIES (SEE COLOR PLATE XVI)

Among hawks, the guilt for poultry, game, and bird slaughter practically falls on two rather small groups, most members of both groups being among the comparatively rare hawks. The whole genus *Accipiter*, consisting of the Goshawk, Cooper's Hawk, and Sharp-shinned Hawk, are savage, bloodthirsty, and cold-hearted slaughterers, and are responsible in large measure for the anathema that is the portion of all hawks. Of these the Goshawk (*A. atricapillus*) is at once the largest and most destructive. It inhabits only the northern wooded portions of America, coming south in winter to a line extending from Virginia to central California, and farther south in the mountains.

This intrepid bird has frequently been known to chase a fowl into a farm-house and make its kill in an inner room (see page 459). It is a forest hawk and is seldom seen far from the cover of woods. It feeds on birds in preference to all other food, with rabbits as second choice. On northern game preserves it is coming to be a grave nuisance and has seriously menaced the small remaining numbers of Heath hens on Marthas Vineyard. Its rarity over most of the country is its one redeeming feature, unless we can admire its intrepid courage and its great beauty, ignoring its destructiveness.

The Cooper's Hawk (*A. cooperi*) is the most important species as a destroyer of game and poultry. It is a common species everywhere in North America, living in the woods, whence it makes short, swift sallies, returning immediately with its prey. It is seldom apprehended at work and is known chiefly by its accomplished depredations. It is a bold, cunning, and destructive hawk, and is, more than any other species, responsible for the work which has given all hawks a bad name. While most of its daily kill is among the birds of the forest, it is a serious nuisance on the farm, taking toll of young chickens, ducks, and pigeons, but being hardly powerful enough to tackle successfully the grown birds.

This hawk can usually be told by its flight, which is accomplished by three or four sharp flaps and a short sail, repeated as long as it is in sight. When it soars, its circles are small, and the long tail and rounded wings give it a totally different appearance from the "soaring hawks" of the red-tail and red-shoulder type. It is almost the exact counterpart

Photograph from Louis Agassiz Fuertes

THE SHRIKE ON HIS LOOKOUT

His business is to espy the passing falcon afar, and by his excitement and clamor to inform the trapper of the hawk's approach (see text, page 435).

of the smaller Sharpshin, whose habits are equally destructive, but the quarry is smaller, in keeping with the size of the bird.

THE BIRD-KILLING FALCONS ARE NOT COMMON

The long-winged true falcons, which include the Duck Hawk or Peregrine, Prairie Falcon, and Pigeon Hawk, as well as the powerful Gerfalcons of the far north, are all great bird-killers, and it is fortunate that they are nowhere common. These splendid birds all kill on the wing, ignoring sitting prey, and while we must admire the skill, speed, and grace with which they strike and the nobility of their courage, it is true that they do much damage on game covers and preserves, appearing in numbers when game becomes abundant.

The Gerfalcons are too rare to be economically important, but the Duck Hawk is found in small numbers all over America and must be considered an undesirable bird. It can take care of itself, however, rarely falling to the gun and avoiding traps with uncanny skill.

In the more arid portions and in the mountains of the West the pale-brown Prairie Falcon is not rare. This species is less partial to water and feeds exten-

Photograph by Howard H. Cleaves

A RED-SHOULDERED HAWK PHOTOGRAPHED AT THE MOMENT OF ITS STRIKE

Note the phenomenal reach of leg of this bird of prey, a species widely distributed and commonly known as the "Henhawk." The name does it an injustice, for it deserves to be encouraged and protected as an enemy of rodents and destructive insects.

sively on desert quail, jays, and other birds of its inhospitable habitat.

The Pigeon Hawk is really much like a tiny peregrine. It can catch the fleet and elusive sandpipers and plover along shore and is usually encountered following the migrating flocks in spring and fall. This little falcon varies its diet and improves its record by consuming large numbers of crickets, grasshoppers and beetles, but it is a willing and capable ogre when song birds abound, and one seldom comes to hand that has not plenty of evidence against it in its crop.

Among the owls, the Great Horned, or "Cat Owl," does practically all the damage for the family. Big, powerful, aggressive, and fearless, he finds no difficulty in helping himself to the farmer's poultry whenever he feels like it, when allowed to roost outside. A muskrat trap, set baited or bare on a convenient perch near the chicken yard, is a cruel but practical way of determining who has been thieving, though sometimes a Barred Owl, ratting around the barns, falls victim to this method.

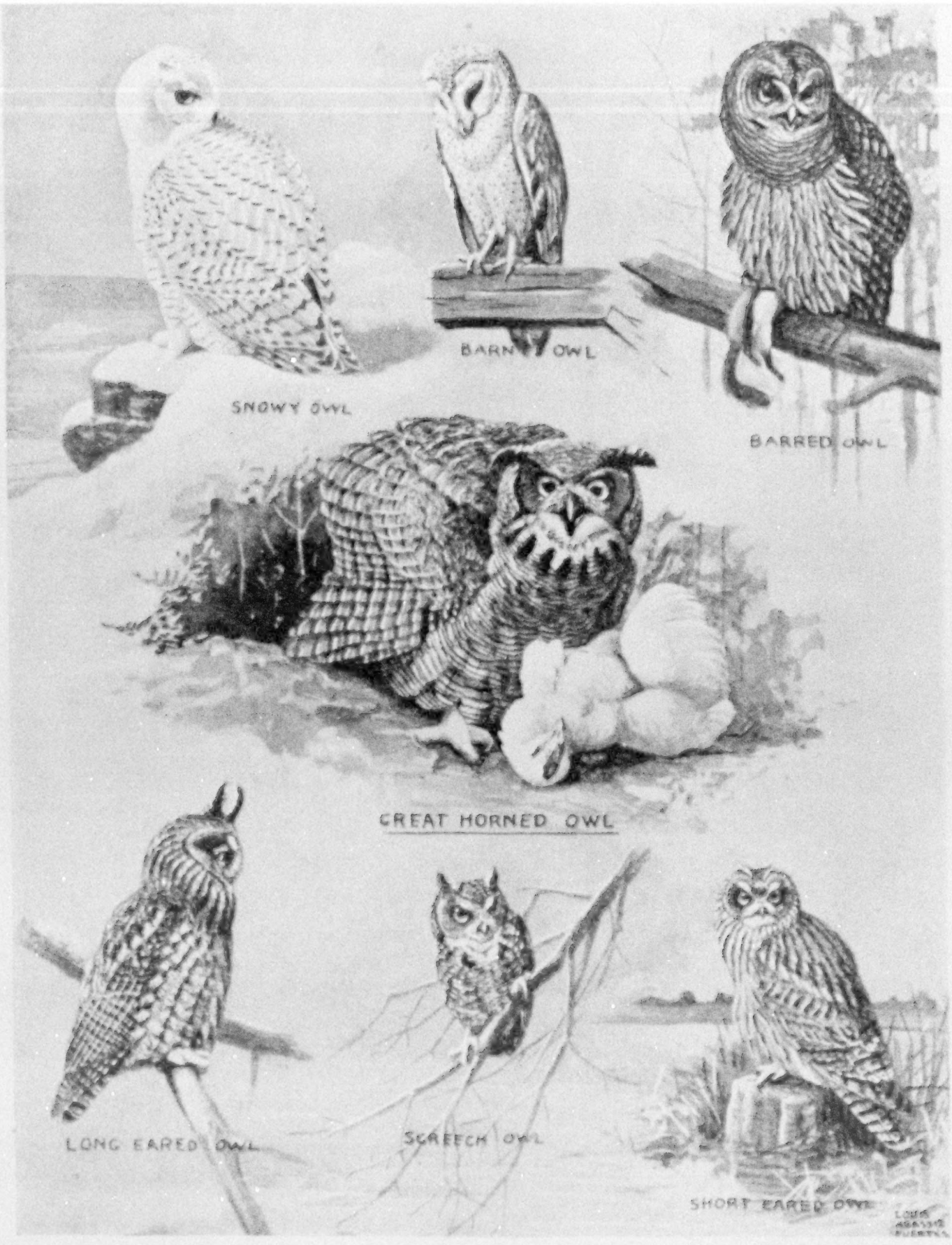
These, then, are the real culprits, if placed on a profit-and-loss basis. The beneficial species outnumbers those on the "black list."

THE BENEFICIAL SPECIES (SEE COLOR PLATE XV)

By far the most important group of rodent-killing birds is the very group to which we have mistakenly given the common name of "Henhawk" and "Chicken Hawk," a most unfortunate error and one most difficult to undo.

It may be stated broadly that the big, conspicuous hawks we see sitting, eagle-like, on tall snags above the green of the woods, or in exposed positions from which to view a large area, or sailing in broad, majestic circles high in the summer sky, are not the ones we may blame for our losses, but *are* the ones we have to thank for holding in check the vast and all-but-overwhelming army of field-mice and other destructive mammals which keep agriculture near to the unprofitable point. These pests are difficult and very expensive to fight by artificial means, and the soaring hawks are their one great and efficient enemy.

Next come all the owls except the Great Horned, which, indeed, must have



From a painting by Louis Agassiz Fuertes

OF THE SEVEN OWLS ORDINARILY ENCOUNTERED IN THE UNITED STATES, THE ONLY ONE THAT DOES MORE HARM THAN GOOD IS THE GREAT HORNED

While most of the others occasionally kill a bird, they are, as a family, decidedly helpful to man, killing vast quantities of mice, rats, gophers, and squirrels. They see by day just as well as other birds.

some credit, as he, too, kills his full share, but in addition to a diet of valuable prey.

Of the *Buteos*, or "Soaring Hawks," the big Red-tail is the commonest and most widely diffused, and consequently the most important. Almost universally dubbed "Henhawk," this valuable species is universally persecuted and shot on sight.

Let us take the summary of Dr. Fisher's examinations of 562 stomaches of Red-tails from all over the United States. Of these, 89 were empty, leaving 473 which carried evidence. Of these, 54 contained poultry or game, 278 contained mice, 131 other mammals (28 species of destructive mammals), 37 batrachians or reptiles, 47 insects, 8 crabs, and 13 offal.

If a Red-tail is *caught in the act* of killing poultry it should be shot, as it "has the habit." The above record shows plainly, however, that the preponderance of evidence is vastly in favor of the species, whose size and appetite make it a most effective and valuable ally of the farmer in his fight against the mice and rats that menace his labors.

All over the West another large and conspicuous hawk is found, which is a great killer of vermin, particularly of small rodents. This is Swainson's Hawk, whose record is absolutely clean, its whole food being divided about equally between small mammals and insects.

THE RED-SHOULDER SHOULD BE ENCOURAGED

Another very common and widely distributed "Henhawk" is the Red-shoulder. This bird has an even better record than the Red-tails. Some 200 examined revealed only 3 which had eaten poultry, 12 small birds, *142 mice and other mammals*, 92 insects, and a number with miscellaneous food.

Mr. Alden Loring, who watched a pair of this species that nested near a poultry farm, says: "The pair reared their young for two years about 50 rods from a poultry farm containing 800 young chickens and 400 ducks, and the keeper told me he had never seen the hawks attempt to catch one." This hawk deserves to be encouraged to the utmost, and both it and the Red-tail should be relieved of the false title by which they are so generally known and designated, either by their proper names or as "Mousehawk," and accordingly treated.

The Broad-wing, the small member of this group, does not often fall into the hands of farmers and gunners, as it is a forest hawk that seldom leaves the shade and shelter of the woods. Its particular claim to man's protection lies in its partiality to the large, fat caterpillars of the big *Cecropia*, *Polyphemus*, and similar large moths that defoliate the forest trees. It also, of course, consumes quantities of field-mice, voles, and shrews, and small snakes are favorite food.

The two Rough-legs feed almost exclusively on mice. The eastern Rough-leg comes to the northern States only in winter, and is not common enough to be of much economic importance. Of 45 stomachs of this species containing food, 40 contained field-mice and 5 other small mammals.

Over all western America the Ferruginous Rough-leg, or "Squirrel Hawk," is a fairly common and very important species.

With the utilization of large areas through irrigation, the ground-squirrels of the *Citellus* group have multiplied enormously, and not only cost the region millions of dollars in the grain and produce consumed, but do untold damage by burrowing in the irrigation dikes, causing floods to pour over the land at times when they are fatal to crops. By far the most effective enemy of these pestiferous rodents is the Red Rough-leg, or "Squirrel Hawk," and, as with the less desirable species, it has responded to the abundance of food, and has within comparatively few years become the principal check upon the greatly increased numbers of destructive ground-squirrels.

THE OSPREY, OUR LARGEST HAWK

The Osprey, or Fishhawk, as its name implies, feeds exclusively upon fish. It is our largest hawk, being almost as impressive on the wing as the Eagle himself. Its food consists almost wholly of the sluggish fish, such as carp and suckers, and it is in no sense a competitor of the angler or the commercial fisherman. It is our most picturesque bird of prey and should by all means enjoy perfect immunity and protection.

England, now almost without Ospreys,

XUM

© Howard H. Cleaves

AN OSPREY, OUR LARGEST HAWK, RISING FROM A STRIKE

This is America's most picturesque bird of prey, and on the wing is almost as impressive in appearance as the eagle. Feeding exclusively on fish, the bird checks itself directly over its quarry when sighted. With wings folded and talons wide open, it descends, sometimes burying itself in the water with the force of its impact. In the above photograph the hawk is seen rising from the water after striking a decoy fish anchored to a stone.

would give much to rehabilitate this beautiful creature if it could do so. But let us realize that it is virtually impossible to reëstablish any species when it has once become locally extinct.

And here let us take heed in the case of another fine species, one with every patriotic and sentimental reason for its most sedulous protection—the White-headed, or "American," Eagle. For the past year this noble species has been placed upon the black list in Alaska and, far from being protected, a bounty of 50 cents a head has been placed upon it. This had resulted, up to January, 1920, in the killing of some 5,000 eagles in Alaska.

It is charged that eagles interfere with the salmon fisheries and kill large numbers of young deer, sheep, and goats, and on this plea one of our most beautiful and interesting species is threatened with early extermination in the one region where it is, or was until recently, sufficiently common to give a thrill to the visitor. It would seem that the mere fact that it is the universally recognized emblem of our nation should give this fine species protection wherever it is found in America, and that no local interest, until thoroughly substantiated by expert Federal investigation, should withdraw it from the safety of complete Federal protection.

The Marsh Hawk has not quite so clean a record of achievement as have most of the foregoing, as out of 115 stomachs 41 contained bird remains, of which 7 were game or poultry; 79 contained small mammals, the preponderance of which were meadow-mice. Thus, while it is mainly beneficial, it does kill quite a proportion of feathered food.

Last, but very important, comes the common little Sparrowhawk. As small as the smallest, his abundance and wide distribution make it necessary to reckon with him. The American Sparrowhawk

is a little falcon, related to the Kestrel of Europe, but, unlike the European Sparrowhawk, an inveterate bird-killer, related to our Sharpshin. Our little falcon, the most ornate and beautiful of American hawks, is of invaluable service to agriculture by virtue of his fondness for grasshoppers. Occasionally he catches a bird; about a third of his diet is mice, but far the largest part is insects. During June, July, and August, when the young are being raised, they are fed over their weight daily on grasshoppers.

The service rendered by owls is even less appreciated than that of hawks, because they are mostly nocturnal, and hence are seldom heard and almost never seen. Owls are quite as expert mousers and ratters as the diurnal birds of prey, and the Great Horned is the only one which deserves a consistently bad reputation.

The Barred Owl lives almost exclusively on field and white-footed mice, with chipmunks, squirrels, rabbits, crawfish, and insects to vary the menu.

The Barn Owl, common all over the warmer parts of America, is exclusively a rodent feeder, and is 100 per cent beneficial, while both the long-eared and short-eared species are in virtually the same category, the Long-ear foraging in and around the margins of wooded areas and the Short-ear frequenting the wet meadows and marshes for voles, shrews, and mice.

Everywhere the commonest of all, the little Screech Owl, is the bird that most people hear and recognize. His soft, quavering call and velvety tooting are familiar and welcome sounds to those who know him, for he is the one owl that can and does survive with the taming of the land. Indeed, he seems to thrive best in the more thickly settled farming regions, nesting in the "woodlot" or orchard, in the village parks, or in the more wooded estates in the suburbs of large cities.

No bird of prey has a more varied list of food than this smallest of our common owls, as the following summary will show: Of 212 stomachs examined, 39 contained feathers, 112 small mammals, 100 insects, 2 lizards, 4 batrachians, 1 fish, 5 spiders, 9 crawfish, 2 scorpions, 2 earthworms, and 7 "miscellaneous."

The beautiful Snowy Owl, which comes in winter to the northern portions of the United States, has in some curious manner had protection specifically withdrawn from it and stands on the list of unprotected "vermin" on the game laws of the land. Out of 26 evidence-bearing examinations, 20 revealed injurious mammals and 11 had feathers among their contents. This is surely in favor of the Snowy Owl, which in winter is frequently seen along the seashore or on the ice-edge on the Great Lakes.

A PLEA FOR THE FARMER'S AIR SCOUTS

Is there not some direct way to bring before the agricultural and economic forces of our land their true relation to our birds of prey?

It is surely short-sighted voluntarily to destroy the greatest natural check on the greatest natural enemies of our greatest natural resource, and it would seem that merely proving the point that the birds of prey do even a little more good than harm would be sufficient to insure them complete protection. But it is easy to show that they are, all in all, of very vast value to our rural interests, and that their beneficial offices would be multiplied exactly in proportion to their increase under adequate protection.

It is largely our conservatism, the unwillingness to give up an idea that has long had lodgment in our minds, combined with the apparently complicated problem of "which is which," that has made the valuable species suffer from the misdeeds of the noxious ones, until now the situation is in many places really critical.

The time is not far away when one of two things must happen: Either proper and adequate protection must be granted and *enforced*, covering all birds of prey except the Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Pigeon Hawk, Duck Hawk, and Great Horned Owl, the whole country over, or we shall soon find it too late to avail ourselves of their inestimable services, and must find new, costly, and far less efficient means of protecting our rural interests from the hordes of rapidly multiplying enemies that will continue, in ever-increasing numbers, to wage war upon agriculture.

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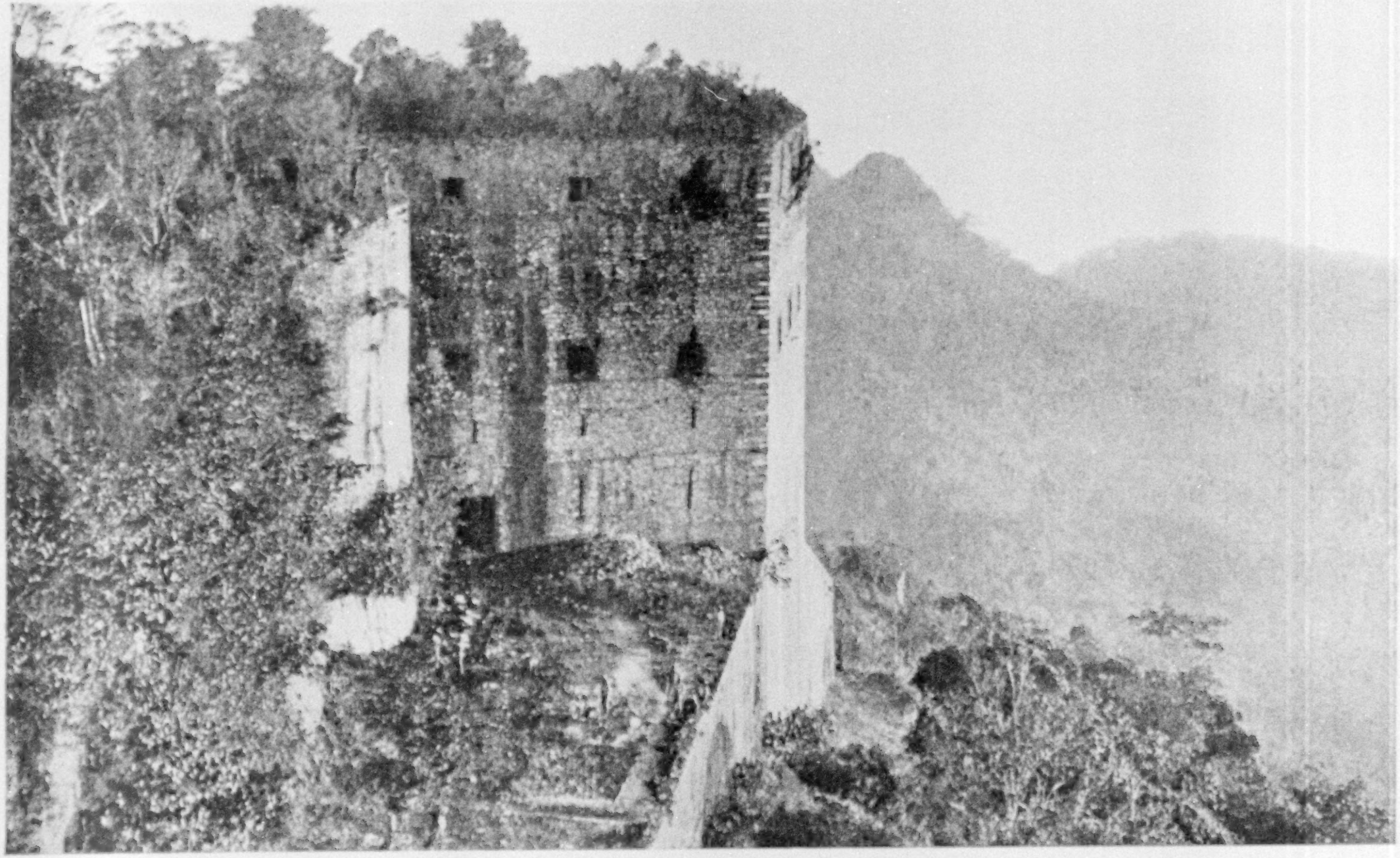

THE MAIN ENTRANCE TO CHRISTOPHE'S CITADEL; HAITI

There are only two entrances to the citadel. One was used to bring in cannon balls from the reserve supplies stored on the terraces, and the second admitted to the prow of the fort. Massive, loopholed wooden doors guarded both entrances. Note the height of the towering walls compared with the men standing on the terrace.

A LITTLE-KNOWN MARVEL OF THE WESTERN HEMISPHERE

Christophe's Citadel, a Monument to the Tyranny and Genius of Haiti's King of Slaves

By Major G. H. Osterhout, Jr., U. S. M. C.

With Illustrations from Photographs by the Author

ABOUT twenty miles to the southwest of the town of Cape Haitien, in the north of the island of Haiti, there stands, on the top of a precipitous mountain, one of the wonders of the Western Hemisphere, yet one whose existence is at present scarcely known and one whose full history will never be written. A personal visit to Christophe's Citadel is necessary in order fully to appreciate its massiveness, its intricate and elaborate construction, and its remote situation (see map, page 489).

Few are so fortunate as to be able to visit this spot, or, even when given the opportunity, possess the physique necessary to make the arduous trip.

It is not surprising that Christophe's Citadel is so little known when consideration is given to the fact that Haiti itself, although only a few hundred miles from the United States, has been so little known as to be termed, until recently, "Mysterious Haiti." And for many to whom the geographic location of the island was familiar it was carefully catalogued as one to be avoided, due to frequent domestic upheavals, revolutions, assassinations, and the general uncertainty there of "life, liberty, and the pursuit of happiness."

THE ISLAND'S ISOLATION FOR CENTURIES IS DRAWING TO A CLOSE

These conditions have been changed recently, however, and, under the military guidance of the United States, the island's government has been stabilized.

Discovered on December 6, 1492, by Christopher Columbus (at Mole St. Nicholas), Haiti's delightful climate and wealth of virgin soil and forest are now for the first time beginning to draw toward it such general attention that it is only a question of a few years when its comparative isolation for so many centuries will be a source of amazement. And by far the greatest source of amazement to the tourist will be this vast citadel on Bonnet à L'Évêque, back in the mountains, eight miles from the town of Milôt, where stands another remarkable architectural pile, the ornate palace of "Sans Souci," both built more than a century ago by an untutored negro.

"EVERY STONE IN THE BUILDING COST A HUMAN LIFE"

Sir Spenser St. John, K. C. M. G. (British minister resident and consular general in Haiti, 1863-1875), in his book, "Hayti, or The Black Republic," makes the following interesting comments on Christophe's Citadel and the palace of Sans Souci:

"The most striking objects near Cap Haitien are the remains of Sans Souci, and of the citadel constructed by King Christophe, called La Ferrière.

"It requires a visit to induce one to believe that so elaborate, and, I may add, so handsome a structure, could exist in such a place as Haiti, or that a fortification such as the citadel could ever have been constructed on the summit of a lofty mountain, five thousand feet, I believe, above the level of the sea. Some of the walls are eighty feet in height and sixteen feet in thickness, where the heavy batteries of English guns still remain in position. All is of the most solid masonry, covering the whole peak of the mountain.

"We were really lost in amazement as we threaded gallery after gallery where heavy fifty-six and thirty-two pounders guarded every approach to what was intended to be the last asylum of Haitian

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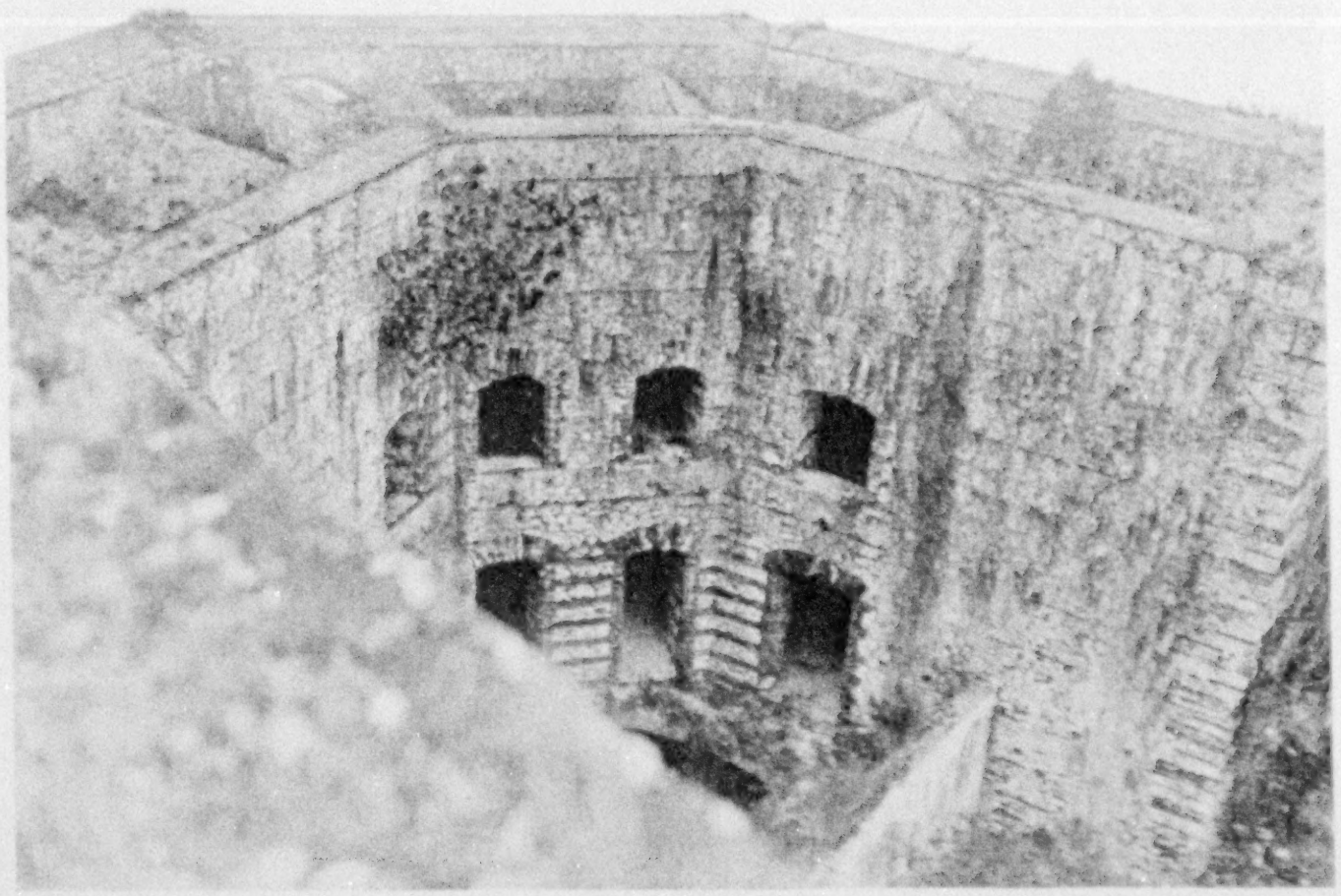


LOOKING DOWN INTO A SUNKEN COURT AT THE NORTHWEST CORNER OF CHRISTOPHE'S CITADEL

Although large granite rocks are to be found throughout the structure, red firebrick of varying sizes was the chief building material used. Apparently the bricks were manufactured on the site of the fortifications.

independence. Years of the labour of toiling thousands were spent to prepare this citadel, which the trembling earth laid in ruins in a few minutes.

"What energy did this black king possess to rear so great a monument? But the reverse of the medal states that every stone in that wonderful building cost a human life."

A Frenchman, Edgar La Salve, in his book, "La République d'Haiti," says:

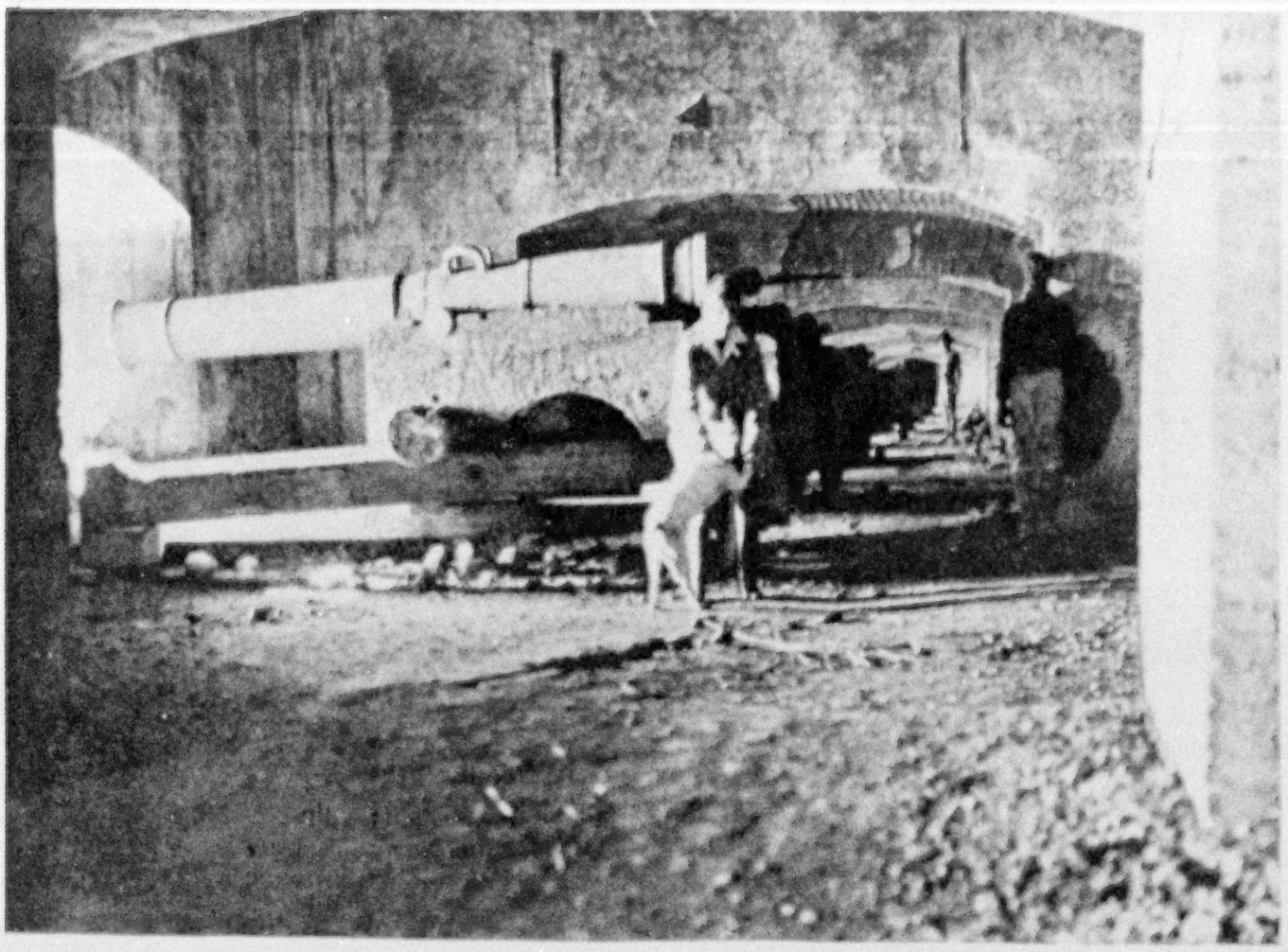
"Nowhere in France, England, or in the United States have I seen anything more imposing. The citadel of La Ferrière is truly a marvelous thing."

CHRISTOPHE BEGAN LIFE AS A WAITER

A brief sketch of the life and career of Henri Christophe is necessary in order to explain the why and wherefore of his citadel and palace, and properly to accentuate the difficulties of their construction. His origin and early life are shrouded in mystery, but it is generally accepted that he was born in 1769, on the island of St. Christopher.

It is known that prior to the first general uprising of the slaves against their French masters, Christophe worked as a waiter in Cap Française (now Cape Haitien), and it was in this humble capacity that he is supposed to have picked up his smattering of English and formed the acquaintance of English naval officers.

Tall and of a splendid physique, with exceptionally bright and piercing eyes, and with a reckless bravery and a terrible ferocity, combined with no little duplicity and cunning, he speedily achieved a conspicuous place as one of the trusted lieutenants of Toussaint L'Ouverture, that remarkable negro strategist who rose from slavery to a position of commanding importance in Haiti and who suc-



THE MAIN BATTERY IN THE EASTERN GALLERY OF CHRISTOPHE'S CITADEL

Each gun compartment has wonderful vaulted ceilings 20 feet in height, and each compartment is separated from those adjoining by thick walls of masonry, to minimize the effect of local explosions.

cessfully led the slaves in their revolt against the French, prior to the independence of the island republic.

Through treachery L'Ouverture was captured and carried away to Fort de Joux, in France, where he died in prison in 1803. His immediate successor was the both famous and notorious Dessalines, who became the successful leader of the Haitians against what was left of the army of 30,000 men Napoleon had sent to Haiti in 1801, under his brother-in-law, General Leclerc.

The struggle lasted two years, during which time Leclerc died of yellow fever. Finally the revolutionists were completely successful, establishing the independence of Haiti January 1, 1804.

Throughout all the strife Christophe was especially prominent, so that when Dessalines (who, not to be outdone by Napoleon, had created himself Emperor) was assassinated, in 1805, the former was elected President, but under a constitution drafted by one Pétion and containing restrictions distasteful to the new leader. So, in place of accepting the honor conferred on him, Christophe marched on Port au Prince and attacked Pétion's troops without success.

Returning to Cap Française, Christophe framed a constitution to meet his own ideas as to the instrument under which he should rule the state. From this time his operations were confined to the north, while Pétion held sway in the south.

CHRISTOPHE PROCLAIMS HIMSELF KING

Christophe's iron rule soon bore results. His portion of the country began to produce enormous crops of coffee, cocoa, sugar, indigo, and cotton. A large part of the resulting wealth was spent in building up the country; so that Haiti and her black master soon became the talk of Europe as well as of the Western Hemisphere.

ONE OF THE EMPTY TREASURE CHESTS FOUND AMONG THE RUINS OF CHRISTOPHE'S CITADEL

Christophe proclaimed himself king in 1811, with the title of "Henri I." He established a titled nobility and a rigid court etiquette, which he maintained with much pomp. He even changed the name of Cap Française to Cap Henri (now Cape Haitien).

When, in 1804, Dessalines assigned his military leaders to various parts of the country, he instructed them to build strong forts at inaccessible points, where ammunition, arms, and supplies could be stored safely, and where the Haitian forces could hold out against the French, if the latter should try to reconquer the island, which seemed probable at that time.

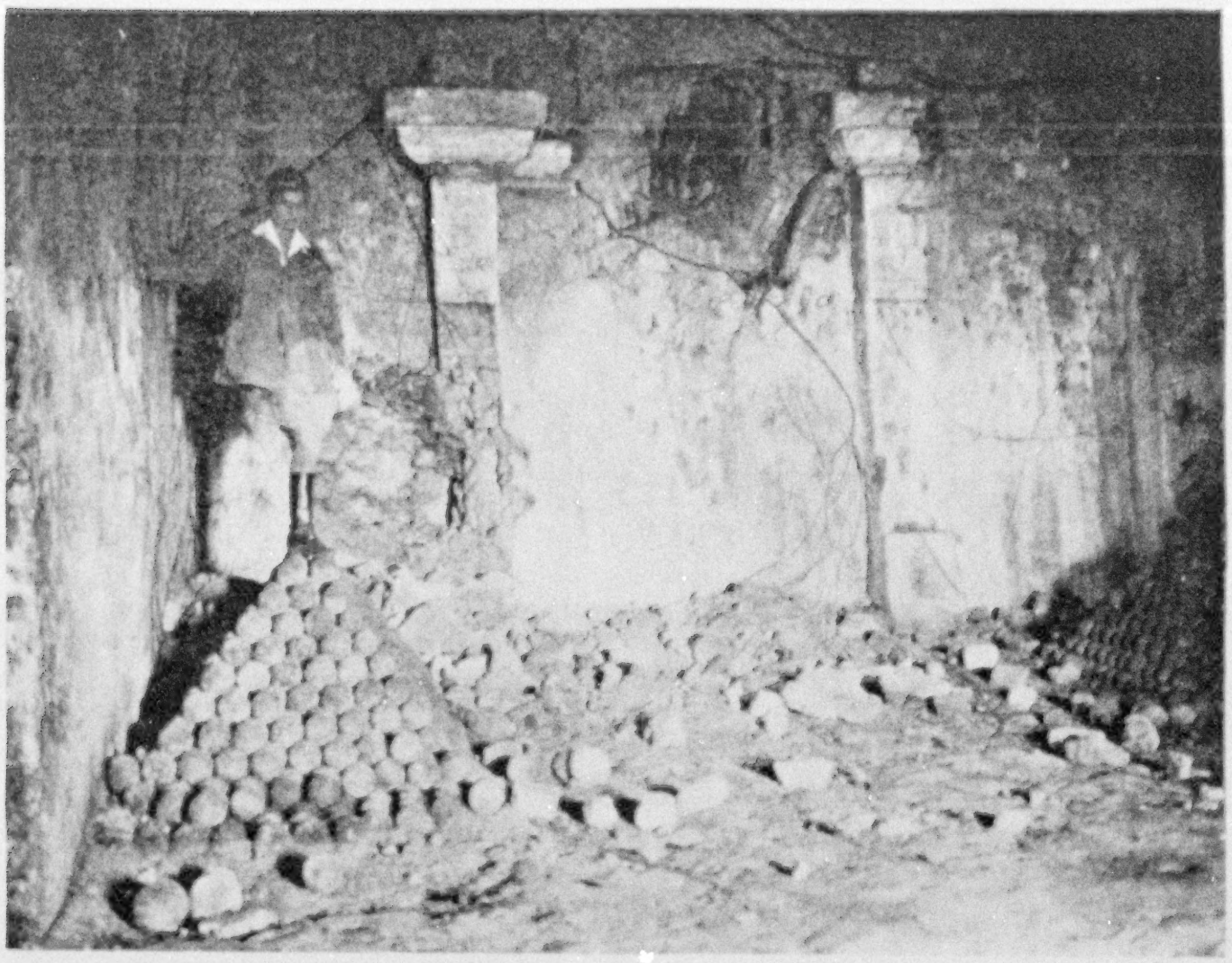
Christophe was assigned to the northern department, and at once set about building the citadel on Bonnet à L'Évêque (Bishop's Hat), which was subsequently called "La Ferrière," then "Citadelle Henri," and which is now known as "Christophe's Citadel."

The zeal and the product of the labor of the commander of the northern department were such as to arouse strong suspicion that from the first he contemplated not only resisting the French but also overthrowing Dessalines.

THE CITADEL'S SECRETS GUARDED BY THE MURDER OF ITS DESIGNERS

It is not known just what length of time was required to build the citadel, but it is evident it was finished some little time prior to Christophe's death, in 1820. Its construction is variously estimated to have taken a toll ranging from ten to twenty thousand human lives.

It is believed that the plans for the structure were drawn and the work of construction supervised by two captive French officers, who possessed the highest order of technical training. When their work was completed, Christophe, in company with these officers, is said to have made a thorough inspection of all parts



HOLES DUG IN THE WALLS OF CHRISTOPHE'S CITADEL IN SEARCH OF TREASURE

Even in the gun gallery and in the walls back of the gun emplacements, treasure-seekers have burrowed like moles in the hope of unearthing some of the immense store of gold and silver reputed to be hidden somewhere in the ruins. Only empty and badly rusted money-chests have been found in recent years, however.

of the structure, and then, upon arriving at one of the highest points of the edifice, ordered both men seized and hurled to their death on the rocks below, thus forever safeguarding the secrets of the place. There is a legend that the tyrant once had an entire company of mutinous soldiers driven off this same spot; it was his favorite method of dispatching those who incurred the royal ill will.

The mere location of this citadel is such that one wonders how nature provided such a site, and a thorough inspection causes unbounded admiration for the master mind that recognized its possibilities, aside from conceiving and constructing the edifice now standing there; for Bonnet à L'Évêque could not have been more ideally located for its purpose if it had been made to order. Occupying the entire top of the mountain, the citadel commands every neighboring peak and approach, while a spring beneath and inside of the building furnishes an abundant supply of water, that prime necessity in withstanding a long siege.

THE CITADEL HAS THE PROW FORMATION

The building has the prow formation, pointing toward the magnetic north, the entire eastern face being in this line. On the eastward side, which is the longest, is located the main battery of heavy guns; and strategically this should be so, for this gives absolute command of the most dangerous approach, that from the direction of Grande Rivière. An army, with the necessary guns and equipage successfully to attack this stronghold, would have to come from that direction.

Guns in the prow commanded the nearer and steeper approaches, both from the direction of Grande Rivière and of Milôt. Other guns along the southern

THE "TREE OF JUSTICE": HAITI

Under this star-apple tree, on the terrace by his palace, Christophe heard all cases and awarded sentences.

and western sides commanded adequately all other points of approach. Numerous loop-holes were especially prepared for the use of sharpshooters.

The elevation at the base of the citadel has been variously given as from 3,000 to 5,000 feet, but a careful reading of a compensated aneroid barometer records 2,600 feet. To this must be added the height of the different walls, in order to ascertain the correct elevation to the top of the building.

The difficulty in reaching the citadel is due not so much to its elevation as to the fact that to reach it one is compelled to cross at least eight miles of mountainous country, and the approaches are all very steep. The highest place on the walls (measured to the ground) is 140 feet. The highest wall, measured perpendicularly, is the prow, which has a drop of 130 feet. Other walls range from 80 to 110 feet.

On the west face there is a terrace 40 feet high. Because of the heavy growth of trees and vegetation on it, this terrace is not visible from above.

BUILT OF FIRE-BRICKS MADE ON THE SITE

Although large granite blocks are to be found in many places throughout the building, most of it is built of red fire-bricks of different sizes, the average brick being fifteen inches long, six inches wide, and two inches thick. These bricks apparently were manufactured on the site of the building. The mountains for long distances in all directions from the citadel show traces of Titanic labor in getting out building material. The average number of floors is four, the longest being on the east face, where the main battery is located. It has a length of 270 feet in one stretch.

The main battery gallery has an inside width of 30 feet. Each gun compartment has wonderful vaulted ceilings 20 feet high, each compartment being separated from those adjoining by thick masonry walls, connected by a low passageway. This is to minimize the effect of local explosions and possible hits.

Behind each gun there are still to be found neat piles of cannon balls ready for use, while in convenient chambers just to the rear of some of the guns are heaps of decomposed black powder mingled with the remains of the original wooden powder cases. A vast pile of similar débris is also to be found in the large powder magazine.

The largest guns are 11 feet 6 inches long, caliber 6 inches (firing a 6-inch cannon ball), 1 foot 10 inches thick at the breech and 1 foot 3¼ inches at the muzzle, dated 1786. They are made of bronze and have enormous hardwood mounts of the primitive gravity return type, moving in train over a large metal arc set in the floor, and on small wheels of a strong make.

EVERY TENTH MAN KILLED

These guns came mostly from the English, some coming from the captured French forts, and others, judging from the very apparent results of the corrosive action of salt water on them, came from war vessels wrecked along the treacherous coast. Similar guns are mounted in the upper gallery on the southern face and in the lower gallery to the northwest. Others are lying in the court and along the east parapet. At least a dozen large mortars are piled up outside.

With the meager facilities available in the early 19th century, and especially in Haiti, it is a source of mystery how these guns were brought up the precipitous mountain trail to their present location. There is a tradition that Christophe was accustomed to assign a certain distance which a given force of men would have to move a gun each day, and upon their failing to do so he killed every tenth man of the detachment.

The surface of the rocks on the trails leading to the citadel is worn in ruts and is as smooth as glass from the passage of the heavy weights over them—a silent testimonial to the appalling amount of labor expended.

A THREE-HOURS' CLIMB TO THE CITADEL

These traces are especially conspicuous along a steep trail down the slope west of the low prow, indicating that toilers or their taskmasters preferred the steeper trail to the more gradual, but longer one, around to the front and zigzagging up to the main entrance.

It is a good three hours' climb either

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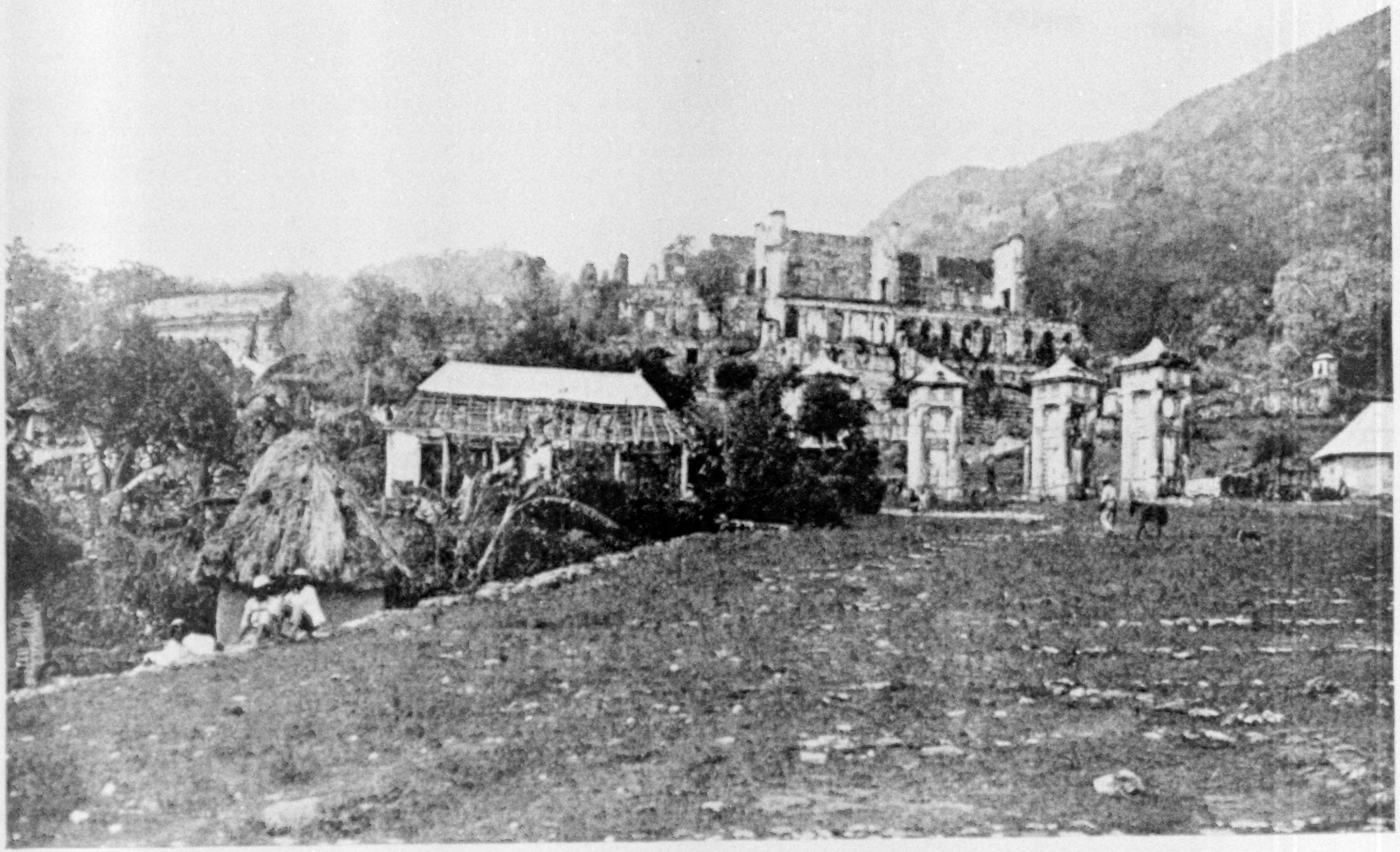

RUINS OF CHRISTOPHE'S ORNATE PALACE, SANS SOUCI, AT MILÔT, HAITI

The French origin of the style of architecture is apparent at a glance. The site of the structure commands a magnificent view down the fertile valley of Milôt.

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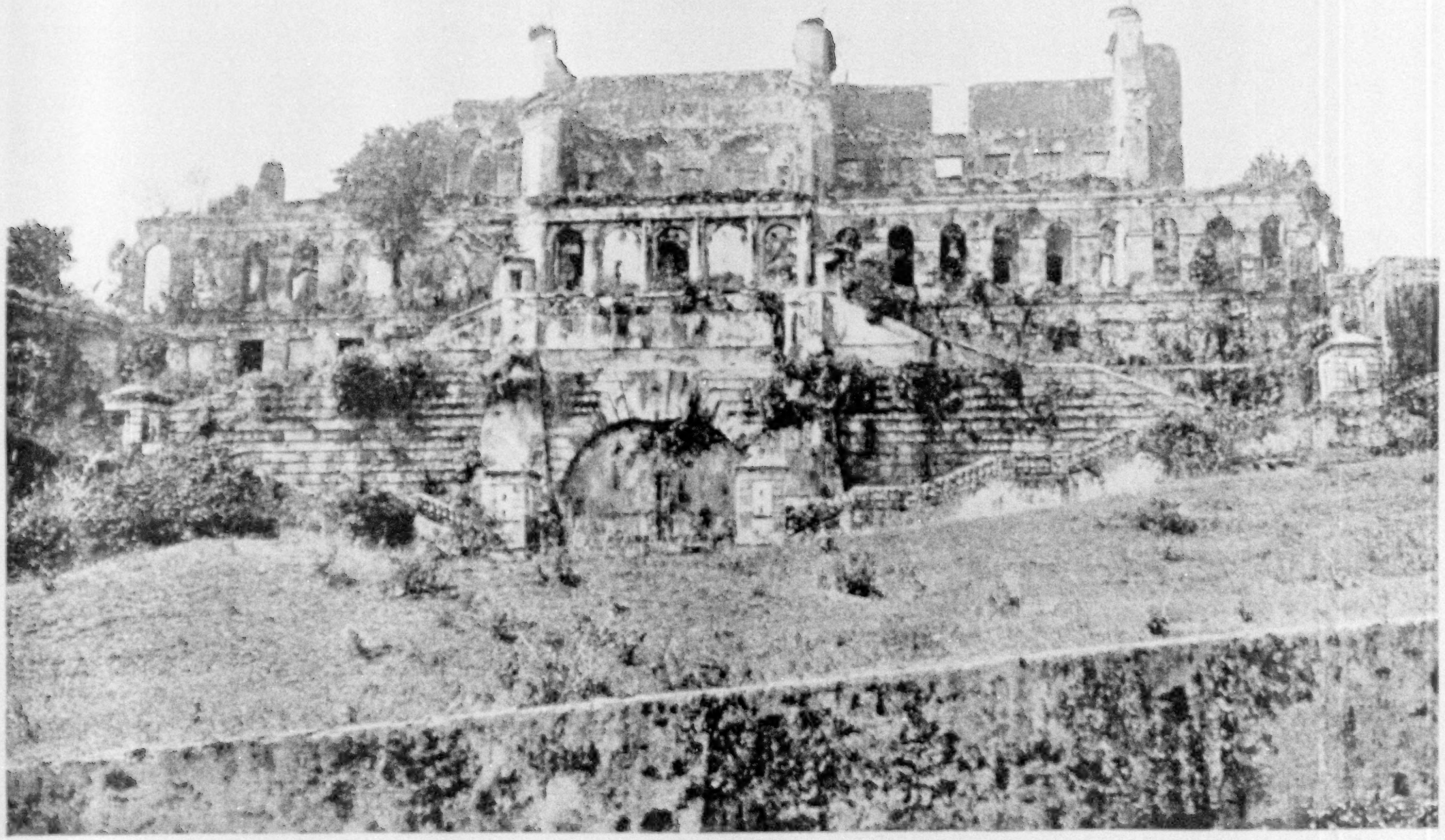
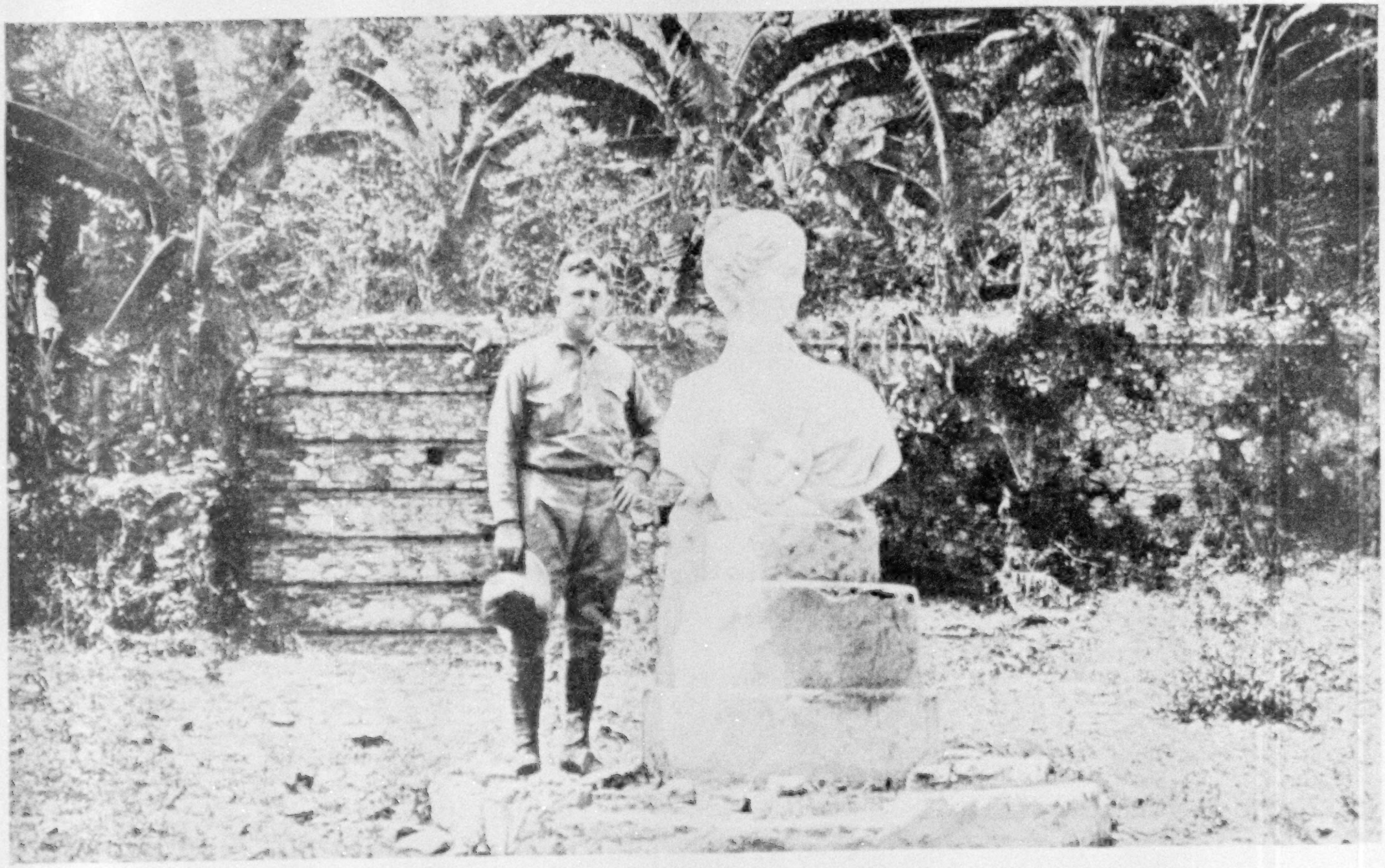


A CLOSER VIEW OF SANS SOUCI

At the front are to be seen the remains of a series of beautiful terraced gardens.



IN THE PALACE GARDENS OF SANS SOUCI: HAITI

One historian has described Christophe's palace as "an unbelievable edifice, worthy of the 'Arabian Nights,'" where the black monarch held a court as gorgeous as that in an opera bouffe.

from Milôt or Grande Rivière to the citadel, the grade from the latter being far easier. The trip may be made on horseback when the trails are dry, but from Milôt up it is extremely cruel to ride the animals and scarcely calculated to improve their usefulness. From Grande Rivière it is not so bad. A person can climb on foot about as fast as the horses make it; but, even when in the best of condition, a man will be thoroughly exhausted on reaching the top. Yet fairly large parties, including ladies, make picnic trips to the place, sending food and bedding in advance. On such occasions the visitors spend the night in these romantic and awe-inspiring surroundings, making a leisurely return the next day.

There are only two entrances to the citadel. One was used to bring in the reserve cannon balls from the long piles stored by sizes on the sloping terrace to the south; the other only admits to the prow. Both entrances were closed by massive, bolted and loopholed wooden doors.

THE STRUCTURE ONLY PARTLY WRECKED BY EARTHQUAKES

The entire structure is in an excellent state of preservation, except that the floors in the prow were all shaken down in the earthquake of 1842, which laid the town of Cape Haitien in ruins.

The top of this prow has three large fissures, a result of the same shock, while its west side is now covered by a growth of bright red lichen that gives it the appearance of having been painted. The structures on the extreme top, resembling a roof garden, were also badly shaken by the earthquake. It is difficult to understand, however, how Sir Spenser St. John could have written: "Years of the labour of toiling thousands were spent to prepare this citadel, which the trembling earth laid in ruins in a few minutes"; for only a comparatively small interior portion is in ruins even now, and that not to an extent impossible of repair with comparatively little labor.

On the night of his death Christophe's body was placed in lime in the main tomb of the citadel. The tomb inside a nearby room is supposed to contain the remains of some of his family. The latter is unmarked.

STORIES TO HORRIFY THE VISITOR

The masonry pile at the summit is thought by some to be a cap on the original peak of the mountain; but others have excavated a large section of it, hoping to find the enormous treasure reported to be buried about the place. It seems probable this is only a covering for another tomb.

Considerable digging has been done in many parts of the citadel with the hope of locating the treasure mentioned—even in the gun gallery in the walls back of the gun emplacements. However, as the money-chests—badly rusted, completely wrecked, and empty—still remain in and around the dungeons, it would seem that whatever treasure once existed has long since been removed.

Many stories have been given tongue by the native guides to inspire the horror of the visitors. For instance, on his first visit, the writer was shown a sizable masonry chute in the center of one of the galleries and informed by the Haitian guide that it was a "death slide," through which Christophe hurled his victims from the side of the citadel into the valley far below. Subsequent investigation revealed the fact that the end of the "death slide" was less than twenty feet above a terrace and must have been designed as a chute for refuse!

THE BLACK KING'S ORNATE PALACE OF SANS SOUCI

The ruins of the ornate Sans Souci Palace at Milôt, while very elaborate, do not compare with the citadel in interest or as a source of speculation; yet the remains of such grandeur in that location make a profound impression on a visitor, causing many reflections on the earthly ambitions of Christophe and serving as an index to the truly regal state which he must have achieved.

The French origin of the architecture is apparent at a glance, while the site, with its command of the view down the fertile valley of Milôt, is one of rare beauty.

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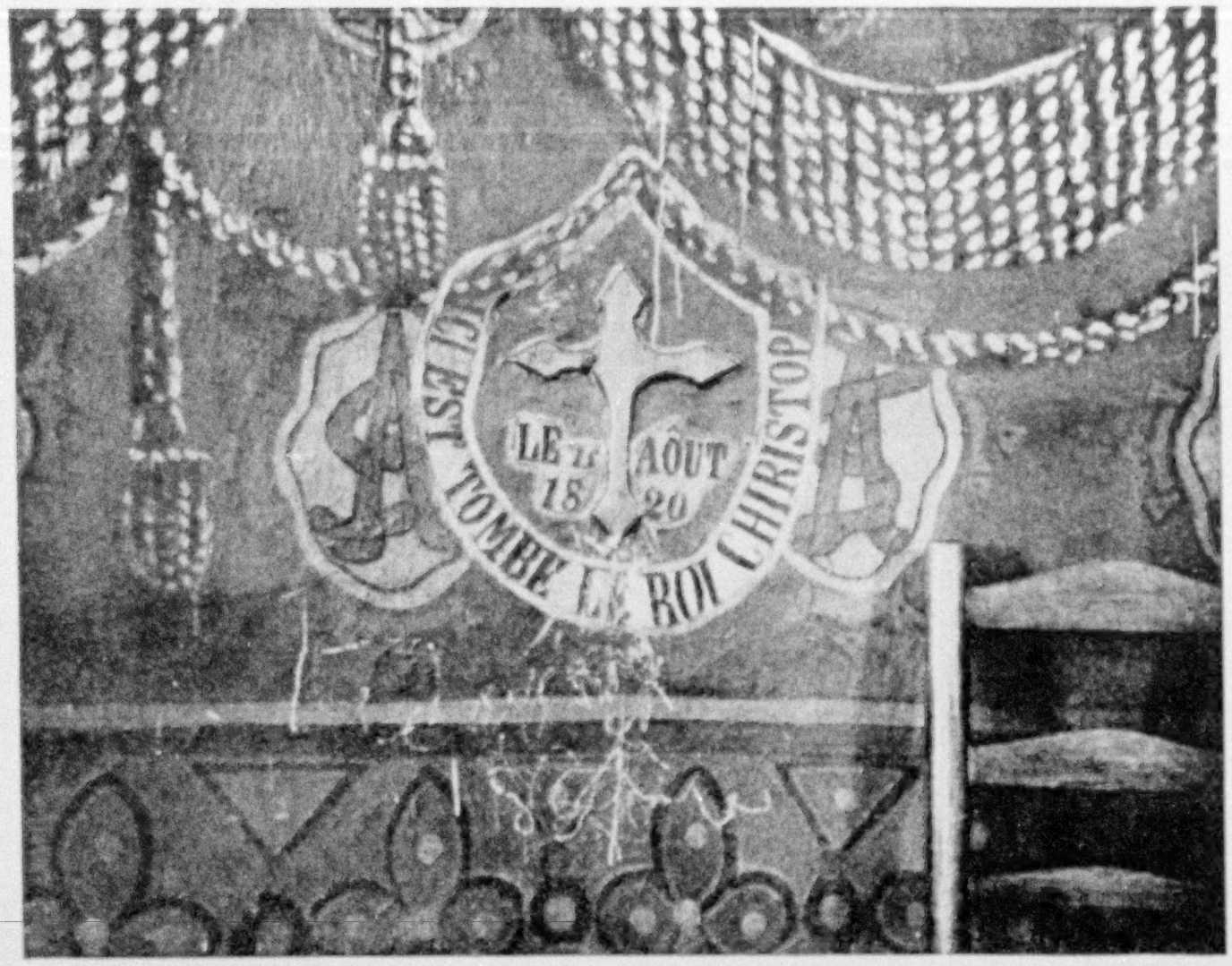


INSCRIPTION ON THE WALL ALONGSIDE THE ALTAR WHERE CHRISTOPHE FELL

It was while attending mass in a church at Limonade, 12 miles from Cape Haitien, that the one-time waiter who made himself king was stricken with apoplexy, on April 15, 1820.

THE EMPTY TOMB OF CHRISTOPHE

Photograph by Mrs. C. R. Miller

A HAITIAN BELLE IN PORT AU PRINCE, HAITI

At the front one sees the remains of a series of beautiful terraced gardens, while to the rear are the ruins of many masonry houses formerly occupied by the black king's numerous retinue, household guards, and stables.

The name given this palace serves as a very pointed expression of Christophe's barbaric nature and peculiar twist of mind. Some have imagined that the Haitian tyrant borrowed the name from Frederick the Great's famous pleasure palace, after the fashion in which Toussaint L'Ouverture styled himself the "Buonaparte of St. Domingo," but more practical chroniclers offer this key to the mystery:

In the war against the French slaveholders, Christophe had one rival by the name of Sans Souci, who rose to command the entire northern section of the island, from Borgne to Fort Liberté, the territory over which Christophe wished to hold sway.

After Toussaint L'Ouverture had been exiled, Dessalines succeeded by intrigue in persuading Sans Souci to join his cause. Soon after this occurred, Christophe inveigled Sans Souci to the plantation of Grand-pré and there deliberately murdered him, thus avenging himself for past bitter experiences and defeat and gaining at the same time control in the northern department. Hence it is assumed that this name applied to his palace served Christophe as an ironic reminder of the whole affair and possibly as an indication of his contempt for his late rival and the manner of the latter's taking-off.

CHRISTOPHE'S MELODRAMATIC END

Christophe's downfall and death were as sudden and melodramatic as the rest of his career. The final act in the drama began with an episode in the church at Limonade, Haiti, twelve miles from Cape Haitien and about fourteen miles from Milôt. While attending mass on April 15, 1820, he suffered a stroke of apoplexy and fell heavily to the floor alongside the altar in the chapel, paralyzed below the waist.

One version of the incident is that he slapped a priest at the altar and was smitten in the act; another, that a priest poisoned him by means of the communion cup. Even today, in the vicinity

Photograph by Harriet Chalmers Adams

DANCING TO THE MUSIC OF THE TOM-TOM IN HAITI

The tom-tom is one of the weirdest of musical instruments. It sounds far away when close at hand, and close at hand when far away. The voodoo worshipers make great use of it in their frenzied orgies. The drummer sits beneath the tree.

of Limonade the tourist is regaled with the story that, as the king remained in the town several days in an effort to conquer his affliction, all roosters, burros, and other noisy domestic creatures within a radius of many miles were killed, while children were not allowed to play, traffic was stopped, and every precaution taken to preserve absolute tranquillity.

He was eventually removed to Sans Souci, but news of his illness spread rapidly and he began to be deserted at once by his more distant but embittered followers.

DESERTED BY HIS TROOPS, THE KING COMMITS SUICIDE

In October of the same year (1820), the towns of Saint Marc and Cape Haitien having deserted his cause, Christophe resolved to punish the rebels. On October 8 he tried to recover the use of his limbs by having them vigorously rubbed for a considerable period with a mixture of rum and pepper, but this expedient failed and he was obliged to be carried out in an armchair to review his departing troops, whom he charged with carrying out his mission.

The king's army was scarcely out of sight when it went over to the other side.

Upon receiving reports of this calamity Christophe realized at once that the time of retribution had arrived and that his only escape was suicide. It is related that he went about his preparations most methodically, calling in his wife and family and making provision for their safety and welfare. Then, after bathing and arraying himself in a spotless suit of white, he grasped a pistol and fired a shot through his heart.

His remains were carried that night to the citadel on Bonnet à L'Évêque, which stands today as the most impressive monument to a tyrant in our hemisphere, and which will serve to preserve his name for generations to come, while those of his more illustrious contemporaries and successors sink into oblivion.

HAITI, THE HOME OF TWIN REPUBLICS

By Sir Harry Johnston

THE best general name for the second largest of the Greater Antilles is that which Columbus gave to it after its discovery in 1492—Hispaniola. He christened his first settlement there "San [or Santo] Domingo" because it was discovered on a Sunday.

As to a great extent the Spanish colonization of the island proceeded from this fortified town, now the capital of the Dominican Republic, "San Domingo" to a great extent superseded Hispaniola (Española) as the name of the whole island. The French pirates and buccaneers (*Boucaniers*, or the people who visited the island to kill the wild cattle and dry the strips of beef—boucan—in the sun) generally called the island "Saint Domingue."

The aborigines seem to have lingered longest in existence in the northwestern parts of Hispaniola, and the name which they gave to their country, or to one of its districts, was *Haiti*.

Eventually the French pirates were succeeded by a regular French colonial administration in the reign of Louis XIV, and an arrangement was come to with Spain by which the western third of Hispaniola became a French colony, the eastern two-thirds being almost forsaken, owing to the superior attractions to the Spaniard of his vast empire in Central and South America.

THE ISLAND IS DIVIDED INTO TWO INDEPENDENT STATES

The French continued to use the name Domingue down to the close of the eighteenth century; but when the negro revolt became victorious in 1804 the Arawak name of Haiti was revived and applied by the French-speaking negroes to the whole of the island. Then, when the Spanish element in eastern Hispaniola revived and shook itself free of negro domination, it became, in 1844, the Republic of Santo Domingo, or the Dominican Republic.

Now this large island of 28,249 square miles is very sharply and definitely divided into two States—the Republic of Haiti in the west and of Santo Domingo in the east.* Santo Domingo speaks Spanish, either the classical Castilian or a slightly corrupted dialect, and Haiti uses French as its official language, while 2,000,000 of its negro peasantry speak a creole language, which, though founded on French, has become an absolutely distinct tongue. It is somewhat awkward, therefore, to give the name of "Haiti" or of "San Domingo" to the whole island. Hispaniola would be preferable.

It is highly improbable that the whole of Hispaniola ever will be under one central government. Santo Domingo will become a yellow or even a white State. Haiti will always be a land of the blacks.

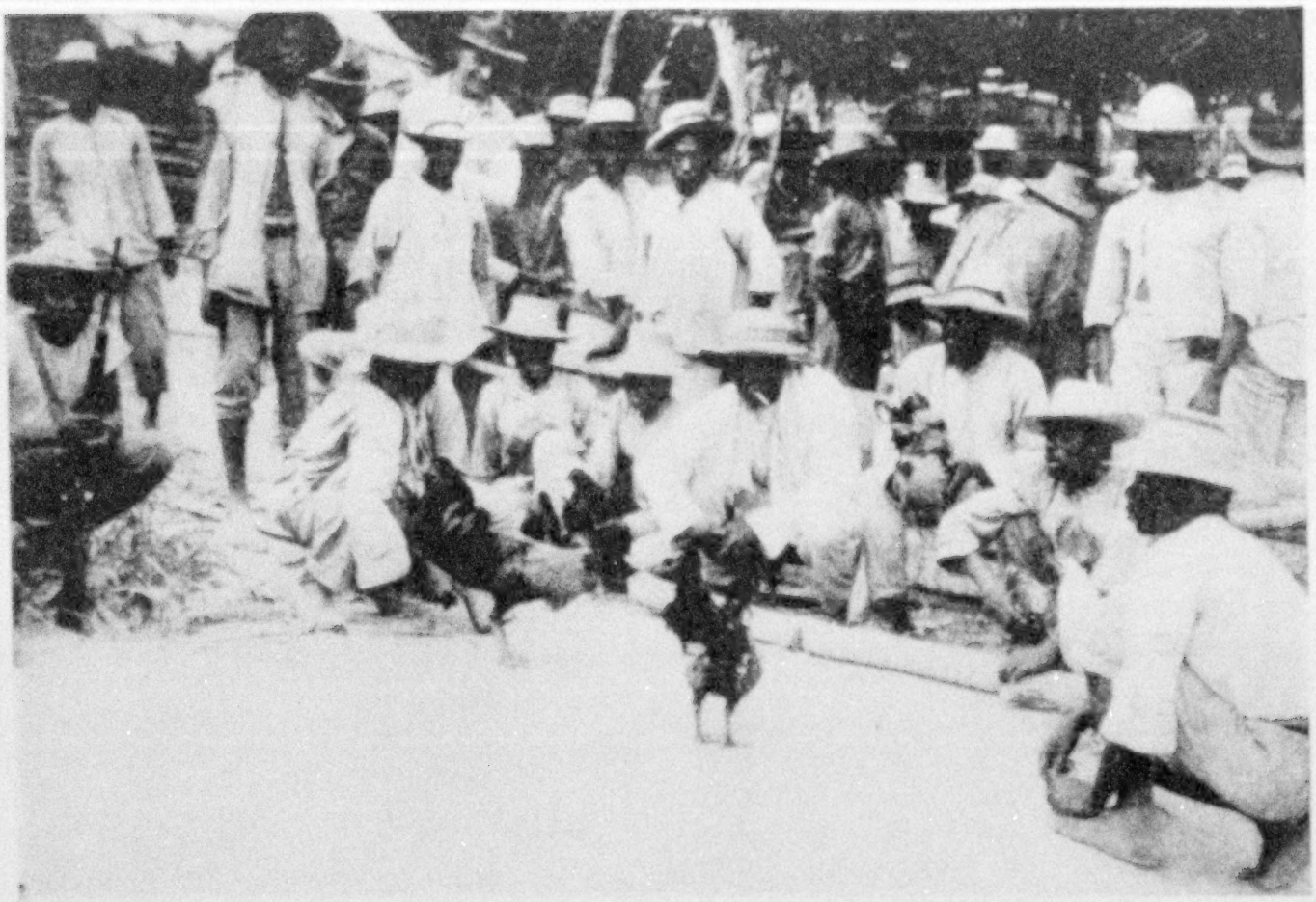
A LAND OF MANY MOUNTAINS AND WONDERFUL SCENERY

The scenery of Haiti—and indeed of Hispaniola generally—when this island becomes better known, will take a very high rank among the beautiful and delectable regions of the world. The climate, though hot, is healthful, and for six months of the year, at least, delightful; while everywhere above 2,000 feet in altitude it is ideally temperate all the year round.

Haiti is extraordinarily mountainous, though its ranges or peaks do not reach to the altitudes attained by two or three points in Santo Domingo, where the highest peak—Loma de la Tina—possibly exceeds 10,000 feet in altitude. The highest point as yet measured within the limits of Haiti is about 8,920 feet (the Saddle Mountains, or Mont de la Selle).

The splendid range of the Cibao Mountains (which begins in the northwest of Haiti) extends from northeast to southwest and is really the spine of the island; but the great altitudes of this range are reached within Dominican limits in the

* See also in The Geographic, "Haiti: A Degenerating Island," by Rear Admiral Colby M. Chester, U. S. N., March, 1908, and "Wards of the United States," August, 1916.

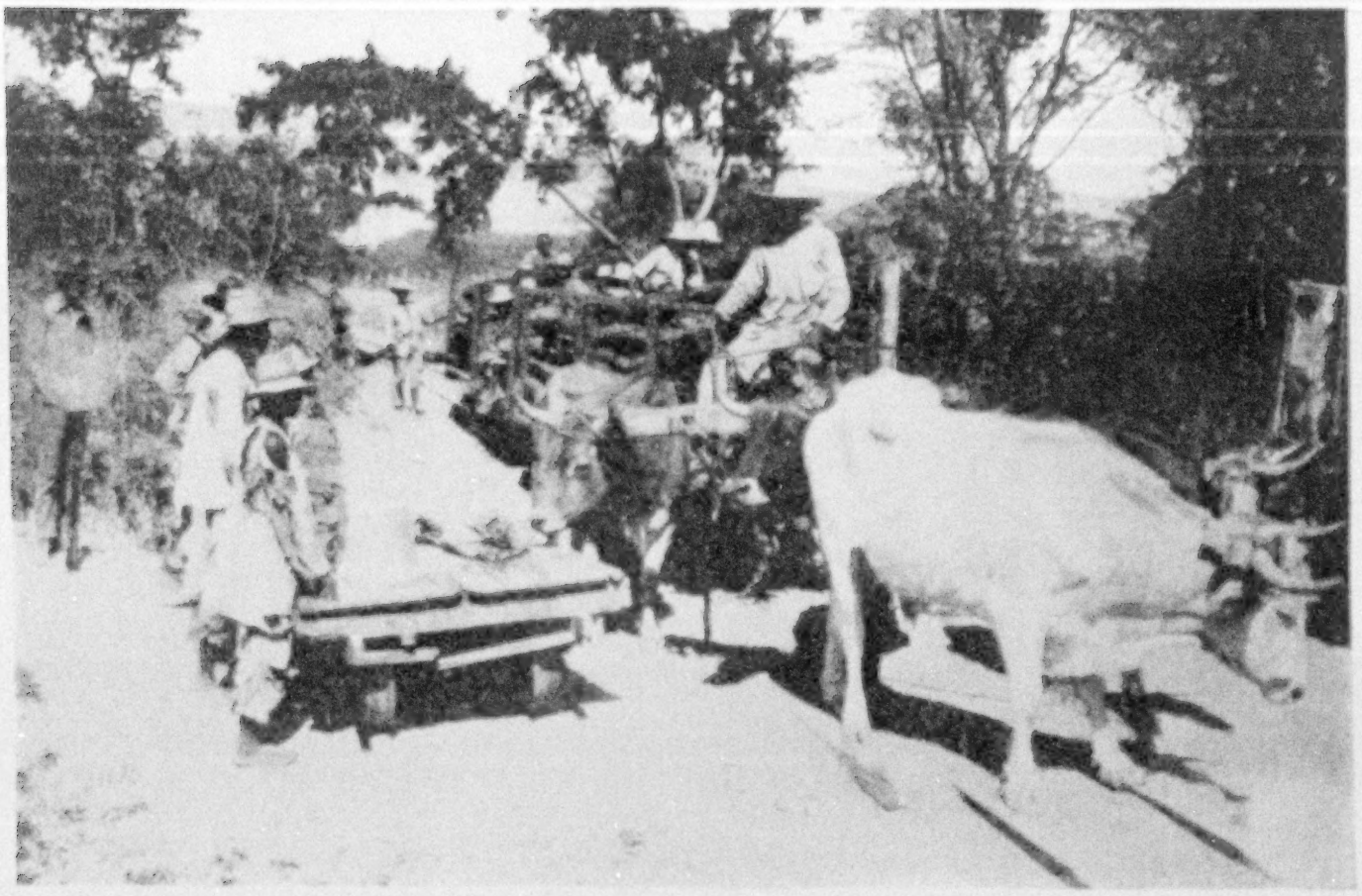


Courtesy U. S. Marine Corps

THE COCKPIT IS THE HAITIAN COUNTERPART OF THE SPANISH BULL-RING

Courtesy U. S. Marine Corps

THE COCKFIGHT IS NOT THE ONLY PASTIME IN HAITI



Courtesy U. S. Marine Corps

A RAILROAD WHOSE MOTIVE POWER IS BULLOCK TEAMS: HAITI

Not much of the block of ice on the flat car in the left foreground will remain when it reaches its destination.

magnificent mountains of Entre-los-Rios, Yaque, and Tina, all of which are just under or just over 10,000 feet.

The greatest altitudes in Haiti are in the southern part of the Republic, along a range which no doubt was once continuous with the Blue Mountains of Jamaica.

Between the southern and northern mountains of Haiti are two intermediate ranges on either side of the valley of the great Artibonite River.

Between the southern Artibonite Range and the long sierra of southern Haiti is a narrow region of plain called by the French originally the *Cul de Sac*. This stretches from the vicinity of Port au Prince, on the Gulf of Gonaives, to the Bay of Neiba, in southern Santo Domingo, and obviously represents an ancient strait of the sea which, a million years ago or less, cut off southern Haiti from the rest of the island.

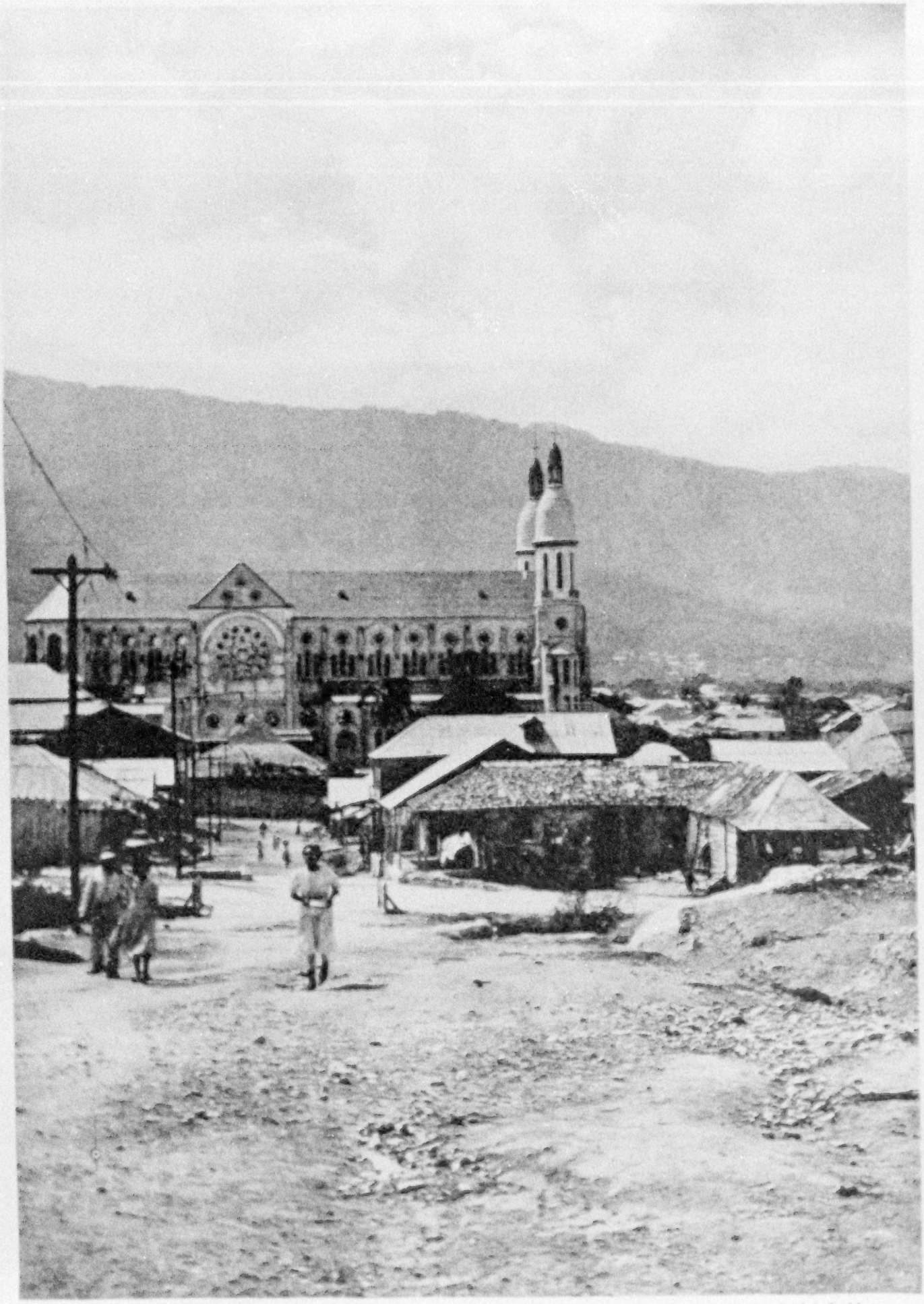
At the present day this plain contains several lakes, one of which (Lake Limon) is fresh, one (Lake Azuey) very salt, and one (Lake Enriquillo, the largest) brackish. Lake Azuey (called by the French *Étang saumatre*) is almost entirely on Haitian territory, but the easternmost end belongs to Santo Domingo. The other lakes are entirely on Dominican territory. All of them offer scenery of the most remarkable beauty.

MOUNTAINS CLOTHED WITH SUPERB FORESTS

On the southern shore of Lake Azuey splendid mountains rise to the altitude of Mont de la Selle—nearly 9,000 feet—while along the northern bank they reach to at least 4,000 feet. All these mountains, above 3,000 feet, are clothed with superb forests of Georgian pines, though the British concessionaires and the Haitian peasantry are rapidly and too recklessly felling these magnificent trees, the complete destruction of which will undoubtedly have a malign influence on the future rain supply.

The lower slopes of the lower Haitian mountains have dense forests of lignum-vitæ, of fan palms, of royal palms, mahogany, logwood, and mimosas.

The water of Lake Azuey is very blue, and this (as also in the running streams



Photograph by Frederick I. Monsen

THE CATHEDRAL IN PORT AU PRINCE

The capital and principal seaport of the Republic of Haiti is situated on the west coast of the island, in a marshy region. It has a population of 120,000.

of Haiti) partly arises from a limestone bottom.

There is a great deal of limestone in the surface formations of Haiti, and this is often revealed in the almost brilliant whiteness of chalk by the heavy rainfall, which sweeps away the humus and reveals great fissures of white, so that the sides of the mountain peaks appear at a distance to be streaked with snow. In the dry season the beds of the mountain streams are blazing white with their boulders and pebbles of chalky limestone. Yet a good deal of the surface in parts is covered with a reddish clay.

WONDERFUL FLOWERING TREES BEAUTIFY THE ISLAND

The flat portions of the shores of Lake Azuey (which in other parts looks very much like a Scotch loch) have a thorny growth of mimosa and of "Cashaw" trees, together with an abundance of arboreal cacti—tall Opuntias, with great fat "hands" studded with ruby buds or topaz-colored blossoms; *Cereus* cacti, growing in erect columns (or else of a branching habit), with creamy white flowers, or other writhing snake-like forms of *Cereus* with triangular stem.

There are also Yuccas, which grow indifferently at sea-level and at 7,000 feet. They are indeed objects of striking beauty in a Haitian landscape, whether silhouetted on the edge of some tremendous precipice and standing out against the clear blue background of distant mountain or rising out of the white sand against the purple waters of the lake.

The Yucca commences with a great mound of lily-like leaves of a vivid green, and from this rises the 30-foot-high flower-stalk—a candelabra of golden yellow blossoms. These clusters of yellow, tubelike flowers are haunted incessantly by birds for the sake of the insects, or possibly the honey, they contain. Consequently these immense columns of inflorescence are rendered additionally beautiful by the bird life that hovers about them so eagerly that it scarcely regards the approach of man.

There are woodpeckers of black with yellow spots, with bright crimson-scarlet heads and rumps; glossy-black and golden-yellow *Icterus* starlings, quits of smalt-blue and orange. There are also occasionally black-green *Lampornis* humming-birds; but these creatures are not so abundant in Haiti as in Jamaica.

The eastern end of Lake Azuey possesses two or three colonies of the scarlet American flamingo. There are iguanas still lingering on the rocky islands along the northern shores of this lake. Elsewhere on the mainland they have been almost exterminated by the natives for the sake of their edible flesh.

The eastern end of Lake Azuey, as already mentioned, is within the political limits of Santo Domingo. Consequently there is a customs station established on the northeast shore to control the road which passes between the two republics. Here I found established a white American official of the best type. He had served in the Philippines and in the Far West. He was a typical Anglo-Saxon, with fair hair and blue eyes, but a deeply tanned complexion.

It was delightful to see what amenities of life he had introduced into the excessively wild region where he was stationed—a sun-baked spot on the southern slopes of 4,000-feet-high mountains, the bush bristling with thorny cacti and mimosas, and the country people—Haitians and Dominicans—none too friendly at first and resenting interference with contraband.

AMERICAN HOME LIFE IN THE WILDS

In addition to an extremely neat and clean fortified station, he had built a little bungalow near the waters of the lake, where most welcome shade from the fierce sun was obtainable. Here was a gramophone of the latest design, with the newest records, and here, while we discussed the delicious coffee and milk which he provided (milk being a great rarity in the Haitian hinterland), the strains of Caruso, Melba, Scotti, the stirring songs of Harry Lauder and R. G. Knowles pealed over the waters and re-echoed from the gorges of the hills.

This gramophone was making the American customs officer popular among Haitians and Dominicans alike over a wide area of surrounding country.

The Dominican frontier guards are

XUM

Photograph by Mrs. C. R. Miller

A COUNTRY SCENE IN HAITI

Every morning hundreds of women may be seen riding into town on horses, mules, or donkeys, bringing their produce to market.

frequently handsome men, and Dominicans generally seem to me a good-looking people, pale olive in complexion, but with features that are sometimes almost Greek in outline. They are obviously a successful race intermixture between the Spaniard and the American Indian.

There are, of course, some thousands of negroes in Santo Domingo, but they do not appear to have mixed their blood with that of the Spaniard so much as has been the case in the French-speaking portion of the island.

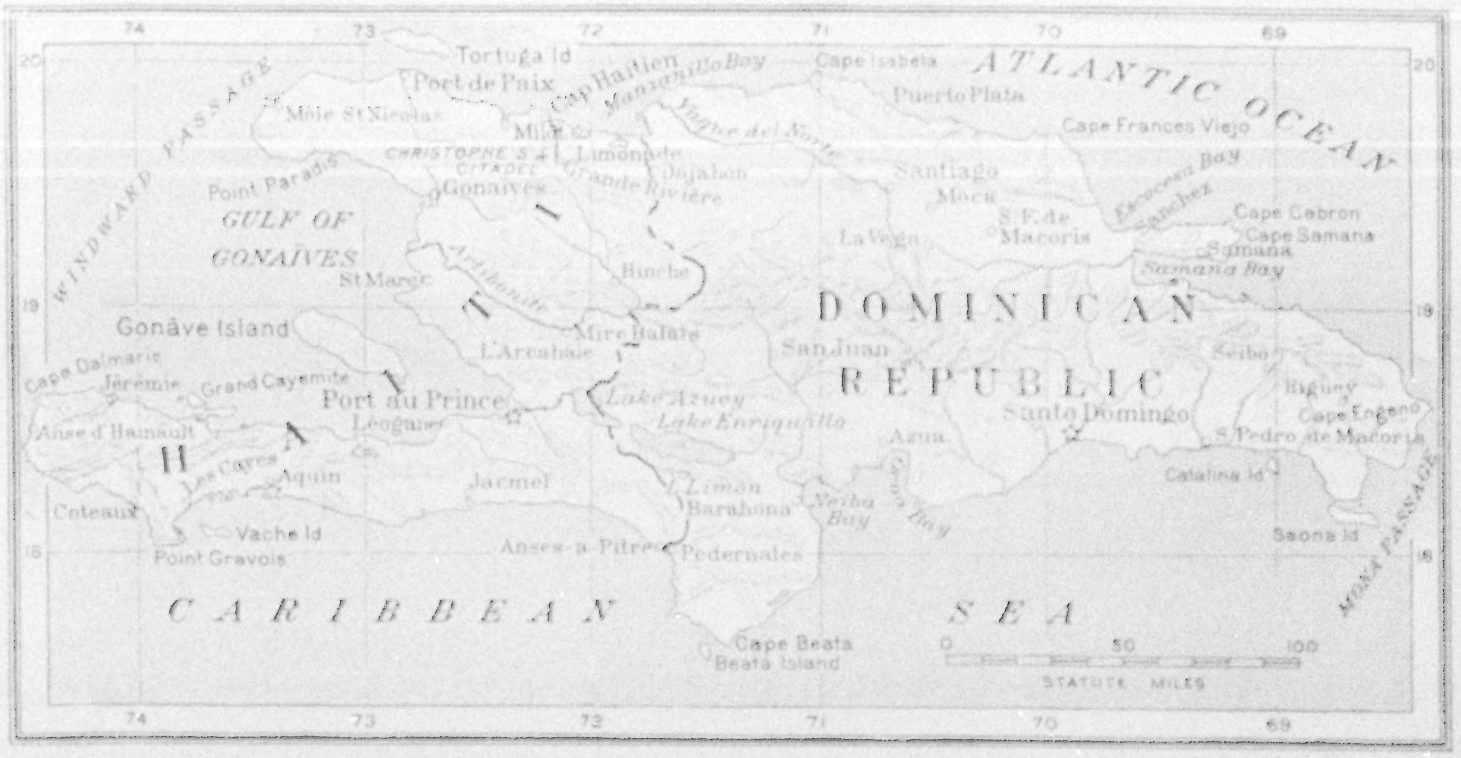
STRANGE PAINTINGS FOUND ON THE WALLS OF ISLAND CAVERNS

In the middle of Lake Enriquillo, on Dominican territory, is a small island which has been acquired by British concessionaires. This island produces rock salt, which is worked for commercial purposes. It has caverns, once inhabited by the aborigines, the walls of which are painted with heads, figures, and objects not easily explained. On account of the human faces which are painted on these rocks, the caverns are known to the Dominicans as "Las Caritas," or "Little Faces."

If the low-lying districts of Haiti are beautiful and attractive in their vegetation and bird fauna, what may not be said about the Haitian mountains. Veritable earthly paradises, perhaps in a way (though less interesting to the botanist) more attractive than the mountains of Jamaica, where there is *too much* vegetation. There has been rather reckless clearing away of forests in Haiti and Santo Domingo, but the result in some cases is pleasing, for it has produced great open spaces on the mountains, which are covered with a lovely carpet of turf, ferns, low shrubs, and lovely flowers.

CRISP ATMOSPHERE, DELIGHTFUL SUNSHINE

Here, in an atmosphere which has all the crispness of temperate North America and the delightful sunshine of an English June, the eye is entranced with the beauty of the landscapes. From a painter's point of view, they are perhaps more wonder-



Drawn by A. H. Bumstead

THE ISLAND OF HAITI, SHOWING ITS TWO REPUBLICS

The Republic of Haiti, which occupies the western portion of the island, has an area slightly less than that of Maryland. Santo Domingo is comparable in size to Vermont and New Hampshire combined. Haiti's population in 1912 was estimated at two and a half millions; Santo Domingo's in 1918 was estimated at slightly less than a million.

ful than anything to be seen elsewhere in the West Indies.

PICTURE SUCCEEDS PICTURE

The extraordinary relief of the surface — tremendous gorges; wall-like mountain-sides; crumbling peaks; zigzag, white-stoned stream valleys; clusters of pines, pillar-like, 200-feet columns of reddish gray stems; the golden candelabra of the yuccas; the acanthus-like foliage of the handsome *Bocconia frutescens*, the scarlet fringes of the bell-like fuchsias, the trailing clusters of rose-pink honeysuckle, the pink flower-sprays of the begonias, the large white rose-like blossoms of the brambles, the vivid blue labiates, the dainty foliage of the dwarf bamboos, and of countless ferns (there are tree-ferns of two or more genera) and of lycopodiums; the emerald-green pastures flecked with vetch and clover and dotted with mulleins having lemon-yellow flowers like the English leopard's bane: all these are elements of remarkable landscape beauty.

Picture after picture is found, to be realized, perchance, many years hence, when there arises a native school of art and when the educated Haitians of the present day—who can think and talk of nothing but Paris and the beauties of France—will give way to an indigenous race of better-educated Haitians, of no matter what color, who will concentrate their thoughts and their thankfulness on the beauty of their own country, which in its own way has no rival.

One of the elements of delight in the mountain country of Haiti lies in the odor exhaled from these forests of Georgian pines—an odor that never seems to be altogether absent from the exhilarating air.

THE MOUNTAIN PEOPLE ARE A COMELY, VIGOROUS RACE

All this most mountainous region is fairly well inhabited, and the little villages of negro peasants appear on nearly every spur or shelf where there is any level space for cultivation. Here their not-untidy, steep-thatched houses may be seen, generally surrounded with emerald green banana groves, for the banana will flourish up to about 5,000 feet.

The mountain people are a vigorous and comely negro race. The fine physical

Photograph by Mrs. C. R. Miller.

THE JAIL AT JACMEL, WHERE MANY POLITICAL PRISONERS DIED, AS A RESULT OF INSANITARY CONDITIONS, BEFORE THE AMERICAN OCCUPATION

development of the men made one regret that they did not revert more to the most defensible African custom of wearing very little clothing, for they would evidently have exhibited forms that would be a delight to the sculptor's eye.

As it is, their clothing is often picturesque, if they can only be induced not to wear a discarded military costume. The head is shaded with a large high-crowned, broad-brimmed straw hat, or rather a hat plaited from dried palm leaves. Very striking patterns of black or red are woven into these hats. The writer of this article brought home a number of Haitian straw hats to England, where they proved to be singularly well adapted to the prevailing mode, and, with the addition of a piece of ribbon or a bunch of artificial flowers, are now being creditably worn in English country towns.

The clothes affected by the Haitian men (putting aside the military uniform for which they all crave) consist of trousers and a rather becoming smock-frock, derived, no doubt, from the French blouse, but completed and embroidered, and resembling very often the smock-frock once worn by the English peasantry.

THE BRIGHT KERCHIEF DISTINGUISHES THE HAITIAN COSTUME

The garments of the peasant women are usually long-skirted blue robes, but in any degree of affluence these can be covered with furbelows and lappets. A bright-colored handkerchief is wound tightly round the hair, and over this, for journeying, is poised a broad-brimmed, low-crowned hat which is held on by a leather strap passed under the chin.

It seems to be a point of fashion that this leathern strap shall terminate in two little twiddles of leather, so that the women often look like negro men with sparse, twisted, goatee beards.

As one descends from the austere heights with their classical pine trees, one enters a region of luscious beauty, especially where the hand of the French colonist of the eighteenth century has shaped or adorned the landscape.

The foliage is magnificent and gorgeous in hues. The feathery, pinnate-leaved, golden-flowered, honey-scented

Photograph by J. H. Hare

UNLOADING FLOUR IN A HAITIAN PORT

Note the wares of the Haitian merchant women spread out upon the cobbled pavement—one step farther than the sidewalk shops of New York's East Side.

logwood trees; the tall shrubs of scarlet-crimson poinsettia; the flamboyants, with immense flower-sprays of scarlet and yellow; the glossy-leaved orange trees, hung with fruit (innumerable globes of ruddy orange); the bread-fruit trees, with their enormous digitate leaves of emerald green; the blue-emerald tints of the bananas; the smalt-blue racemes of the Petrea flowers; the sulphur-yellow allamandas; the exquisite lavender blooms of the gliricidia (like wisteria); the immense glabrous, gray-white tree trunks, surmounted by canopies of black-green foliage; the crotons, with their gorgeous leaves of red and green; the hedges of glossy agaves ("Spanish daggers")—all go to form scenes of entrancing beauty, through which wind narrow, but not ill-made, bridle paths, bordered by fantastic, but always pretty, houses, and occasional strange cemeteries, with tombs like goblin dwellings.

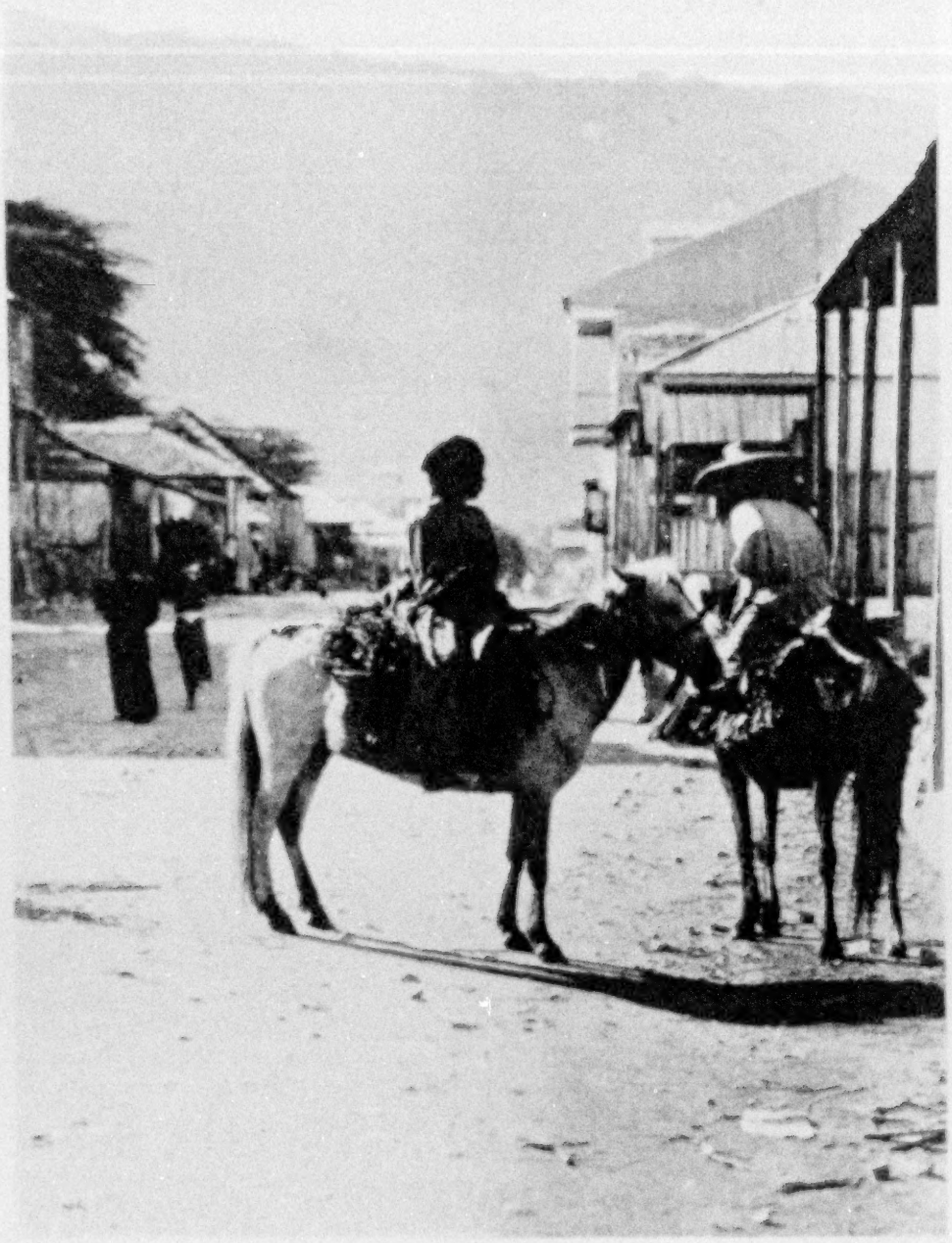
In the country towns of Haiti there is always a great central square, in the middle of which stands a rostrum or pulpit of brick or masonry—sometimes stuccoed and gaudily painted in blue and red (the national colors). These rostrums date from French colonial days and were used, no doubt, as they are now, for the making of public proclamations.

Churches are not very numerous, but where they are supervised by French priests they are well and reverently maintained.

PEACOCKS AND PIGS: THE ORNAMENTAL AND USEFUL

Peacocks are fairly abundant throughout the island, and for the beauty they give to its landscapes should be fifty times more numerous.

Of course, there are tumble-down shanties to be seen here and there; yet the glory of the vegetation and the strange forms which it assumes in the urban cactus hedges redeem everything in Haiti from being mean or monotonous. The worst of the squalor there is lovely be-



ON THEIR WAY TO MARKET

side the squalor of a provincial American town or the suburbs and mean streets of an English city.

There are no vultures in Haiti, a negative feature which at once distinguishes the island from Cuba, Jamaica, and the Bahamas. In Cuba, the Bahamas, and Jamaica there is the well-known turkey-buzzard, with its plumage of glossy blue-black and sepia brown, with satin white underside to its wings and a naked head and beak of crimson and white.

In the Eastern and Southern States of the Union and in Central and South America there are other forms of buzzards, mostly the all-black one. But this bird seems never to have existed in Haiti, and those that have been introduced have died out; so that the only scavenger of the island is the pig.

In many parts of the Republic the pig, originally introduced by the Spaniards or the French, has run wild and developed into a miniature black wild boar. In a rather leaner, gaunter type, the pig is a never-absent object from the scenes of town and country, and it is a useful scavenger.

The domestic pig in Haiti is generally hampered by an extraordinary wooden collar, which apparently prevents it from straying too far afield. The same collar is often applied to goats.

The Haitian cattle are usually of a rather Dutch type, perhaps descended from breeds introduced from northern France. The sheep still have wool (which they seem very anxious to shed), and I nowhere saw those actual African forms of hairy sheep which have somehow or other been introduced into Cuba.

The little horses of the country are a most useful type, but the well-to-do people ride handsome-looking Spanish barbs. Horse breeding might be carried on in Haiti to a very considerable extent, as the climate and feeding seem to suit horses remarkably well. Donkeys are less used than mules for purposes of transport.

PORT AU PRINCE A PINK AND WHITE CITY

When one first approaches the capital of Haiti—Port au Prince—by sea, it has a comely aspect in the daytime, with its new cathedral, with the twin cupolas, and its great mass of pink and white houses

Courtesy U. S. Marine Corps

THE OPEN-AIR MARKET AT PORT AU PRINCE

The scene every morning, between 6 and 8 o'clock, is extremely picturesque. Fish, turkeys, geese, ducks, sheep, goats, parrots, and pigeons are here offered for sale, as well as beans, peppers, avocadoes, pumpkins, and quantities of firewood and charcoal.

(interspersed with handsome trees) strewn over the foothills of the southern mountain range (see page 486).

The city, with a population of 120,000, is at the head of a great gulf, between the northern and southern arms of Haiti, which Nature had intended to be the imperial naval station of the whole world—a region of sheltered seas, healthy climate, and shores supplied with all that man could desire in the way of wood and water and fertile soil. The access to Port au Prince is protected strategically and meteorologically by the great island of Gonave.

Port au Prince has an admirable water supply from the mountains, based on the old French colonial system of pipes and aqueducts.

The roads of the city are now fairly passable, but prior to the advent of the Marines the tourist not infrequently encountered extraordinary muck heaps in the side streets (with occasional dead donkeys). These were the cause of many diatribes from visitors of an earlier day and were, no doubt, the hot-beds of disease.

Before the days of American occupation there was very little continuity in the sidewalks, so that pedestrians had almost invariably to walk along the road, and thus get in the way of the many vehicles and the still more numerous equestrians. But for the most part the houses of the city are comely in appearance, and Port au Prince may quite hold its own in general appearance and in the amenities of life with other large towns in the West Indies.

THE TRAVELER FINDS MUCH COMFORT IN HAITI

There are three or four newspapers published daily, which contain an excellent service of foreign cablegrams. There are only two hotels, but both of them are quite tolerable. Indeed, the traveler who may arrive from Cuba will be agreeably disappointed if he thinks to find barbarism and discomfort in Port au Prince (or indeed in any other towns of Haiti).

Courtesy U. S. Marine Corps

A VIEW OF CAPE HAITIEN, ON THE NORTHERN COAST OF HAITI

Twenty miles to the southwest of this port stands Christophe's Citadel, one of the most remarkable ruins of the Western World (see text, page 469).

XUM

Courtesy U. S. Marine Corps

PORT AU PRINCE POSSESSES A MAGNIFICENT CENTRAL MARKET, WORTHY OF A BIG FRENCH OR AMERICAN TOWN

It is a good-humored, noisy crowd that gathers here every day. A few policemen stroll about, but their services are seldom required to maintain order. In the old days the place was permeated with soldiers, who exacted heavy toll from the market people.

The native cuisine is far superior to the Spanish cooking of Cuba; it is French, or French colonial, and consequently most appetizing.

Haiti is abundantly well supplied with fresh provisions—excellent vegetables, good beef and mutton, splendid seafood, and delicious fruit; moreover, living is far cheaper than in the United States or Cuba.

HAITI'S LIMITED RAILWAY "SYSTEM"

A railway runs through the streets of the city and extends southeastward as far as the pretty little town of Leogane, passing through the truly lovely suburb Diquiny, an earthly paradise. The railway is farther carried eastward to the shores of Lake Azuey.

The President's palace in Port au Prince was blown up in the revolution of 1912. It was a rather ugly structure of glistening gray white, with apparently a good deal of corrugated iron about it. It contained, however, some fine lofty rooms. Some very handsome buildings formerly existed in Port au Prince to the northwest of the President's palace, but under the rule of Nord Alexis, acts of apparently deliberate incendiarism on the part of the government took place, which really destroyed almost a third of the capital.

To the east and north of the palace is the great open space of the Champ de Mars, which is well suited for the evolutions of troops, and might be made a very comely feature in future by being turfed over and set with beds of flowers. In the middle of this open space is a preposterously vulgar statue of Dessalines, who is regarded as the national hero of Haiti, the people having, with typical ingratitude, put on one side the real great man of their history, the remarkable and noble-hearted Toussaint l'Ouverture.

This tin statue of Dessalines is made to carry a sword in each hand and to support with one arm an enormous painted tin flag, which contains the national emblem of a palm tree, surmounted by bristling cannon and war standards, together with the motto "Liberté ou la Mort!" and "Mourir plutôt que d'être sous la domination de la Puissance."

Port au Prince possesses a magnificent central market, worthy in structure and design of a big French town. The interior is very dirty; and apparently the market dues are sufficiently heavy to deter most of the country people from using the place for the sale of produce.

Every morning between six and eight hundreds of country women may be seen riding into the town on horses, mules, or donkeys, borne sideways between enormous panniers of produce.

Much of the marketing goes on in the open air, and these scenes are extremely picturesque. In one corner a woman in a long robe of deep ultramarine blue may be selling fish of extraordinary loveliness, painted with the colors of the gayest parrots.

Elsewhere there are turkeys, fowls, geese, ducks, sheep, goats, or even green parrots and pigeons for sale; enormous quantities of maize, beans, Chili peppers, avocadoes, pumpkins, ocroes, aubergines, and, of course, firewood and charcoal, or forage for the town-kept horses.

WOMEN PREDOMINATE IN HAITI

It is a good-humored, noisy crowd, not requiring ordinarily any intervention from the few policemen who march about with large scarfs, bearing the words "Force à la Loi." In the old days the crowd, of course, was permeated with soldiers in undress or full uniform, soldiers who, it is said, exacted a somewhat cruel toll from all the market people.

The reason why women predominate among the country folk selling goods in town is that the country men for generations have been afraid to descend from their inaccessible mountains for fear of being impressed into military service, and having to redeem themselves from this slavery by heavy payments.

The military element in the past has been the curse of Haiti. Formerly, from early morning till dewy eve the streets were paraded by noisy military bands; soldiers in uniform or out of uniform begged more or less truculently from the passer by; officers in handsome uniforms were accustomed to dash up and down the streets on high-mettled horses, utterly regardless of the pedestrians. The air was rent by salvoes of artillery or of target practice.

XUM

HAITI AND ITS REGENERATION BY THE UNITED STATES

HAITI'S PROBLEM is not one that can be dismissed with a word or cleared up with a stroke of a pen. It is made up of the sum of all the accumulated evils and abuses of more than a hundred fevered, retrograde years—years cursed with tyranny and bloodshed unimaginable; years in which all the plagues enumerated in the litany, of sedition, conspiracy, rebellion, plague, pestilence, famine, battle, murder, and sudden death ravaged the body politic until the tortured tillers of the soil forsook their fields and fled to the hills.

Here, in the elemental wildernesses, the natives rapidly forgot their thin veneer of Christian civilization and reverted to utter, unthinking animalism, swayed only by fear of local bandit chiefs and the black magic of voodoo witch doctors. (See "Haiti, A Degenerating Island," by Rear Admiral Colby M. Chester, in the NATIONAL GEOGRAPHIC MAGAZINE, March, 1908.)

And while the peasants thus took to the bush, the middle and upper class Haitians gravitated to the seacoast towns, where they learned the art of living by the expert exploitation, political and commercial, of the unthinking black animals of the interior.

THE GEOGRAPHY OF HAITI

To understand Haiti's problems, a glance at her location, conditions, and resources and a peep into her history are necessary.

Haiti's history has been remarkable and full of dramatic interest. Physically she is blessed by nature with unstinted wealth. Occupying, with her sister republic of Santo Domingo, the second island of the Greater Antilles, once known as Hispaniola ("Little Spain"), Haiti is situated about 500 miles southeast of Key West, Florida, while Cuba lies about 50 miles across the Windward Passage to her west.

The republic's eastern boundary is made up of a series of rivers and hills, beyond which lies Santo Domingo, while farther to the east lies the third island of the group, Porto Rico.

Haiti has an area of about 10,400 square miles, being about one-fourth larger than the State of Massachusetts. The twin republic, Santo Domingo, which occupies the remainder of the island, is nearly twice the size of Haiti (see map, page 489).

Situated in the lap of the tropics, Haiti possesses every natural advantage required to make her a treasure-house of riches. In her valleys and plains near the seacoast alluvial soil of immense depth and richness brings forth, with the roughest tillage, crops of wonderful bounty.

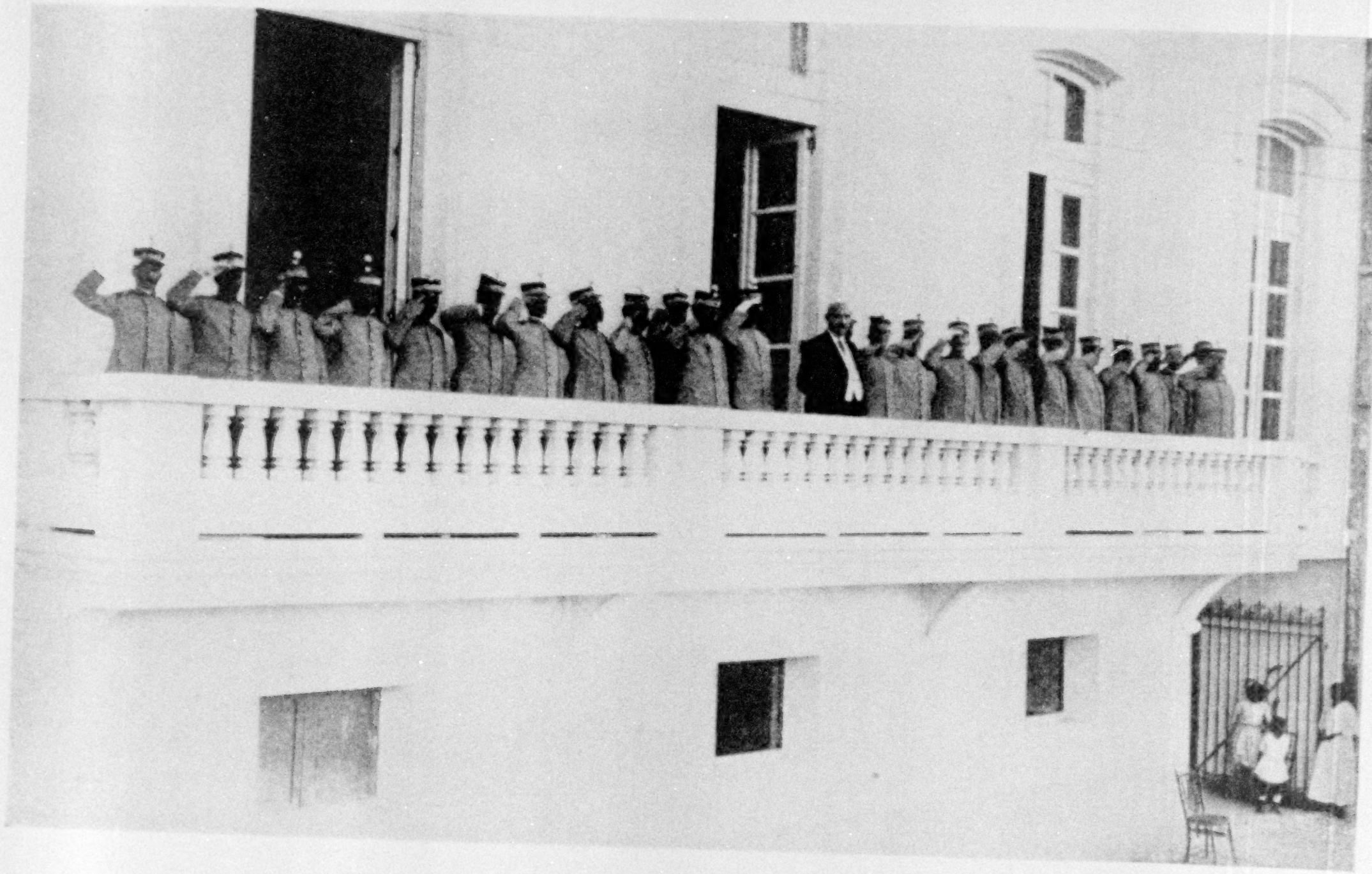
Sugar-cane, cotton, and cocoa are produced in abundance, while Haitian coffee is known to epicures the world over for its richness and flavor. Tropical fruits of all descriptions grow wild, and naturalists declare that more than seventy-five food-plants, cereals, legumes, etc., flourish here.

Higher in the hilly plateaus of the interior, vegetation of a different sort is encountered. Wheat, rye, barley, and other products of the temperate zones are found, while on the mountains, some of which reach an altitude of nearly ten thousand feet, flourish extensive timber forests.

Coal, iron, copper, and other minerals have been found in quantities which promise to pay richly for working, while in the days of the Conquistadores the gold and silver mines of the island are said to have yielded to the viceroy of the Spanish king more than $30,000,000 worth of the precious metals in a single year.

RICH IN TRADITION AS WELL AS IN MATERIAL WEALTH

Rich as the island is in material wealth, it is even richer in history and tradition. Here Columbus landed and here, in what is now Santo Domingo City, he pined in prison, and here, after his death, his



PRESIDENT DARTIGUENAVE OF HAITI AND HIS AIDES—24 GENERALS

Courtesy U. S. Marine Corps

This chief executive has established a record for length of service. Thanks to the stabilizing influence of the American marines, he has been in office since his election, August 12, 1915. Of the twenty-five presidents who held office in Haiti from the founding of the Republic to 1903, fifteen were driven out of office by revolution, three died in office at the hands of assassins, three died in office from causes unexplained, one committed suicide, and one died of wounds received from revolutionists. Only one finished his term and retired to die a natural death (see pages 501 and 503).

bones were brought to be buried in the soil of the new world which he had discovered. Here Pizarro and Cortez ruffled in the streets before they set out to carve new empires for Spain out of Peru and Mexico, and here the capital of New Spain waxed and prospered in learning and culture.

Then came stormy days. All through the sixteenth century English buccaneers, ravaging the Spanish Main, harassed its commerce and harried its cities. French freebooters came also, forming a piratical settlement on the tiny Tortuga Island just off the coast, from which they erupted about 1630, driving the Spaniards from the part of the island which is now Haiti and also from most of what is now Santo Domingo, until in 1775, by a formal treaty, France obtained the whole of the island.

Under the French rule, civilization and prosperity on the island rose to a high pitch. Roads gridironing the agricultural districts were constructed and magnificent chateaux, the homes of landed proprietors, dotted the hills and valleys. It was this period which marked the complete disappearance of the Indians from Haiti and the multiplication of the number of negro slaves imported from Africa, who performed all work in all parts of the island.

Toward the close of the eighteenth century disorders arising out of the revolution in France and its attendant wars shook the island, weakening the whites, until at length the negro slaves arose and with indescribable atrocities wiped out almost the entire white population.

France, though filled with horror, was in the midst of the Napoleonic wars and had few troops to spare for a transatlantic campaign; so, after desultory fighting, the rebels achieved independence.

BLACK LEADERS PROCLAIM THEMSELVES KINGS

A republic was proclaimed and a president was elected. His first act was to proclaim himself emperor in Port au Prince. Not to be outdone, another negro leader in the north proclaimed himself king in Cape Haitien, and set up a system of nobility with eight dukes, including a Duke of Limonade, thirty-seven barons, and other lesser lights, all colored relatives of the monarch. For the story of this remarkable man, Henri Christophe, see pages 469 to 482.

From that time, retrogression to the present followed in natural steps. Social disintegration continued apace. All semblance of order in the interior vanished. Bands of armed negroes roamed the countryside, pillaging and burning as they went. Each negro who could find arms for himself and a few followers proclaimed himself king or president or general, recruited himself an "army," and set out on a career of conquest.

A PICTURE OF ABANDONED CIVILIZATION

At first the magnificent homes and palatial villas of the former French land-owners offered rich loot, but when all of these had been sacked and burned, nothing of value remained, and as the faithful had to be fed, the "generals" turned their attention to those of their own race who after the uprising had chosen to continue to till the fields and were endeavoring to live as they had lived under the French.

Repeated robbery soon reduced these to ruin and desperation. The men who possessed the necessary initiative and education removed to the coast cities, where life was more secure, while the rest left their fields and hid in the impenetrable fastnesses of the hills.

Abandoned by their owners, the comfortable dwellings of the island went to rack and ruin. Weeds overgrew the cultivated lands, and in a generation the fertile fields of the island, which had once produced magnificent crops, lapsed to the tropical jungle from which they had been redeemed many years before.

Seeds sprouted and trees grew in the once famous roads, while to the eye of the occasional traveler the island presented a melancholy picture of the retrogression of man, with its houses and mansions, so substantial that fire and pillage could not destroy them completely, still standing, its magnificent roads overgrown, and its fertile fields a jungle waste—the ruin of an abandoned civilization. In the surrounding wilderness the natives lived,

XUM

Courtesy U. S. Marine Corps

A BAND OF HAITIAN BANDITS BEING BROUGHT INTO PORT AU PRINCE UNDER GUARD OF A SQUAD OF MARINES

amid dirt and squalor, in tiny huts or huddled together like animals, in the open, when night overtook them on their rude trails.

The bandit bands thrived and increased in number and boldness, gaining the name "cacos," the caterpillars, because, like caterpillars, they covered the earth at certain seasons and, like caterpillars, they ate everything. The bands ranged in number from ten to several hundred, each under a chief hostile to every other chief, united only in the desire to plunder and rob, and stopping at no crime or atrocity.

CACO BANDS CAUSE WOMEN TO PREDOMINATE IN HAITI

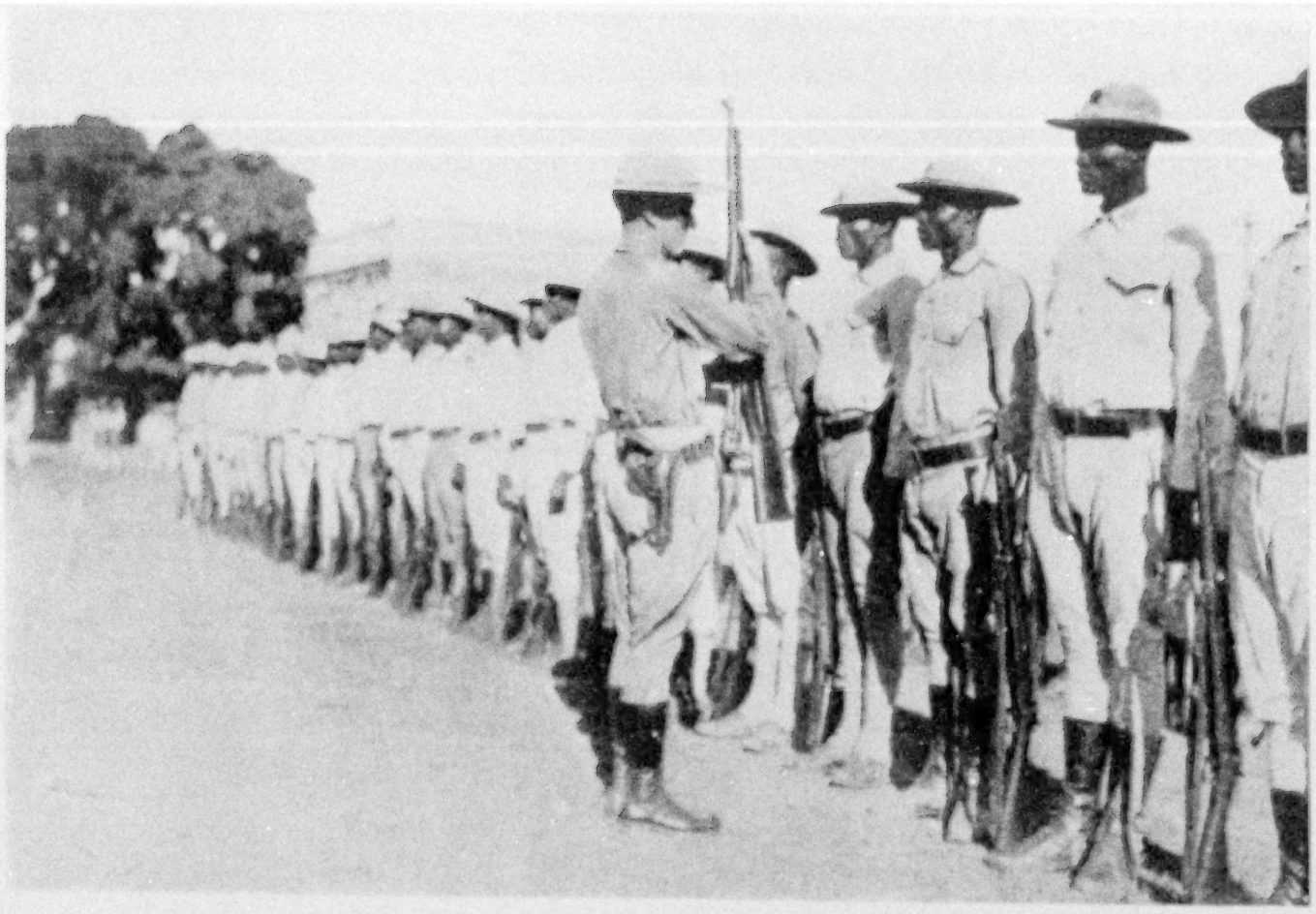
When it became difficult to obtain recruits for these caco bands, all male natives found were pressed into service, from which grew the Haitian custom whereby all peaceful males kept out of sight as much as possible, and nearly all work and barter was carried on by the females.

The slaughter of males by war and the feuds of the bands also kept down the number of men, so that at the time of the landing of the American forces it is estimated the females outnumbered the males by a considerable ratio.

HUMAN SACRIFICE WAS PRACTICED

In this carnival of barbarism religion also had its place. Cannibalism and the black rites of voodoo magic of the African jungles were revived in all their horror, and the sacrifice of children and of animals to the mumbo jumbos of the local wizards was practiced in the appropriate seasons. Poisoning and praying to death became the mode, and missionaries to the island report their belief that fully four-fifths of all the population are either active believers in or hold in fear the spells of the witch doctors.

So much for the interior. In the cities of the coast another condition prevailed. Here an element made up of the mulattoes and the more intelligent negroes ruled, and an attempt was made to keep up the forms of government and maintain order. By the trade which they carried on between the hinterland and the nations of Europe and North America,



Courtesy U. S. Marine Corps

HELPING THE HAITIAN TO HELP HIMSELF: AN AMERICAN MARINE OFFICER INSPECTING A COMPANY OF THE HAITIAN GENDARMERIE

As in the Philippines, the American-trained constabulary, recruited from the better type of natives, has proved highly efficient in the maintenance of order. To assist in improving the health of the Haitians and in the interest of modern sanitation, a corps of native trained nurses has been developed by the American sanitary authorities. American physicians and nurses have found the Haitian women apt pupils in the study of the profession of nursing. In cooperation with local physicians, the Americans have also trained a number of native men who are now filling acceptably positions as health and sanitary inspectors.

certain families waxed rich and prosperous.

TRAGEDY HAS STALKED IN THE TRACKS OF HAITI'S PRESIDENTS

Coalitions of such families would get together, "elect" a president, rifle the treasury, negotiate such foreign loans as could be floated, and fill all public offices with their supporters. Then their interest in the government would cease and a new coalition would be formed, which in turn would propose some new "liberator of the republic," hire caco bands, start a revolution, kill or banish the president at that time in office, and install the new hero. Then the whole performance would start anew, practically all of them coming to the same end.

Of the twenty-five presidents who held office in Haiti from the founding of the republic to 1903, fifteen were driven out of office by revolutions, of whom thirteen were banished to foreign lands, while two were allowed to remain in Haiti to die, which they did quite promptly.

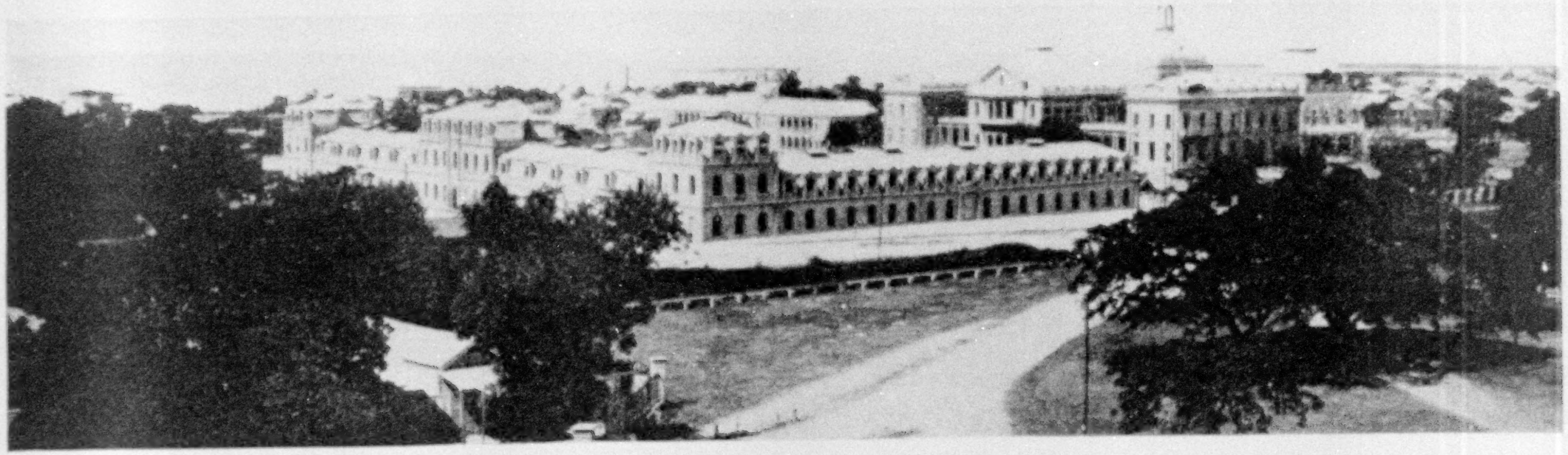
Three died violent deaths in office at the hands of assassins.

Three more died while in office from cause or causes unexplained.

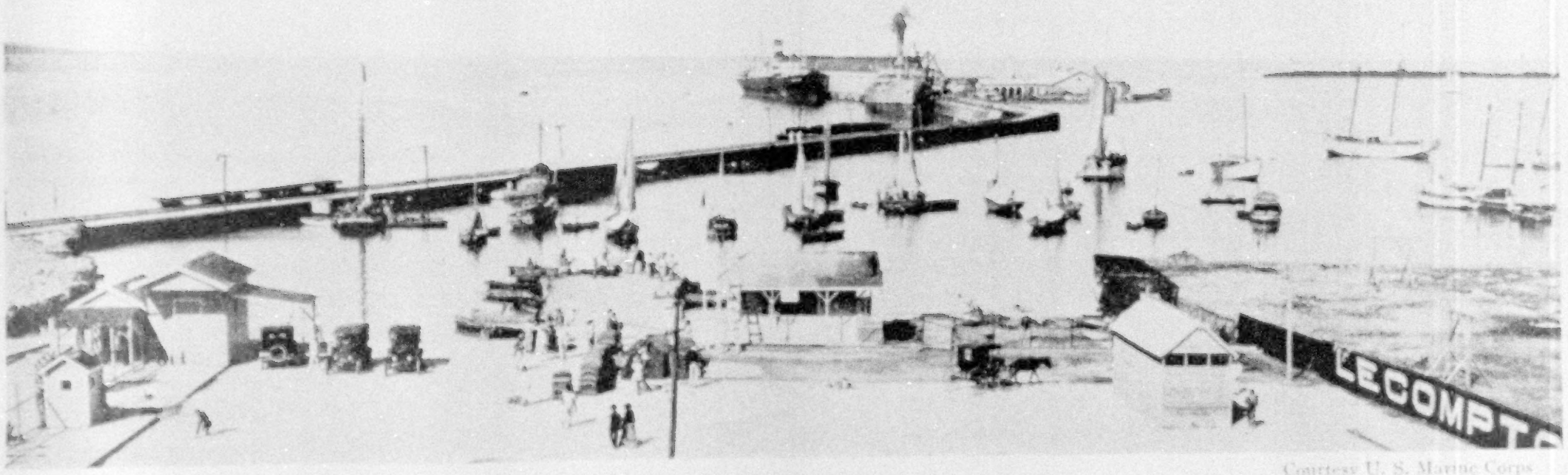
One died of wounds received from revolutionists and one, by committing suicide, disappointed a successful rival, who had planned to make his death a national festival.

One of the twenty-five, who must have been a remarkable man, finished his term and retired from office alive and well, to live to a respectable age and die in peace in his bed!

Thus the procession of presidents passed. Every new president was hailed as a savior and every ex-president execrated as a monster—usually with too



MARINE CORPS BARRACKS AND THE PRESIDENT'S PALACE; PORT AU PRINCE, HAITI



Courtesy U. S. Marine Corps

THE HARBOR OF PORT AU PRINCE AND THE DOCK WHERE AMERICAN TRANSPORTS LAND

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much truth. Some of the traits of these rulers of Haiti are worthy of note. Few of them could read and write. Most of them were intimates of the voodoo priests and doctors and many of them were accused of being practitioners of the highest voodoo rite—cannibalism. Only two of her presidents, Soulouque and Salnave, were generally admitted cannibals and adepts in the feasts which followed the killing of "the goat without horns," as the human victims of the voodoo ceremonies are commonly known, but many others were accused.

Where else on earth could the casket containing the remains of a ruler lying in state in the cathedral be riddled with bullets, or the remains of another ruler be drawn and quartered and the parts dragged through the streets, providing a Roman holiday for a frenzied populace?

After 1903 the open season on presidents became more open than ever, and the procession of revolutions speeded up considerably, the events occurring which brought about the landing of the American forces in 1915.

Administration after administration came into power, each obtaining new loans from European and American bankers and vanishing in turn in revolutionary smoke, leaving only unpaid loans to mark their passage. By 1911 the procession of revolutions had attained such headway that the average official life of Haiti's presidents was less than a year after taking office.

PRESIDENT LECONTE IS BLOWN UP

In August, 1911, the president, General Simon, was overthrown by a revolution, and Cincinnatus Leconte was elected to the office. Leconte lasted until January, 1912, when he attempted to oust a number of incompetent office-holders. Then the evicted ones and their friends procured the aid of the bands of cacos, put the federal troops to flight, surrounded the Presidential Palace, and when Leconte refused to surrender, blew up president, palace, and guards together.

After Leconte's tragic exit, Tancrede Auguste was elected, in August, 1912. He was suspected of being at heart a reformer and was poisoned about eight months after taking office. Shortly after Auguste's death, in May, 1913, Michael Oreste became president. Oreste didn't tarry long in the presidential chair, however. When, in January, 1914, a revolution was started with the avowed intention of adding his scalp to those of other late lamented presidents of Haiti who had been run over by revolutions, he forestalled the revolutionists by emigrating hastily to Jamaica.

A leader named Orestes Zamor next took up the presidential burden. He took office February, 1914, and was added to the list of ex-presidents of Haiti in October of the same year. He was thrown into prison, where he was murdered a few months later because it was feared that he might escape and resume political activities. Zamor was succeeded by Davilmar Theodore, who lasted from November, 1914, to February, 1915, when he was overthrown and succeeded by Vilbrun Guillaume Sam.

WHOLESALE SLAUGHTER OF HOSTAGES

A few months later the chronic revolution made its appearance and the cacos were mobilized against Sam by one Doctor Bobo. Sam, however, was a determined soul and decided not to become an ex-president without a fight. He knew that the revolution was stirred up, financed, and the cacos egged on by wealthy and influential families in his capital city of Port au Prince, and he determined to strike at the root of the trouble. Accordingly, he threw into jail more than 160 of the leading men of the town and announced that unless the revolution subsided there would be vacant chairs in the circles of many of Haiti's first families.

This action, instead of quieting the revolutionists, excited them to greater fury, and new uprisings broke forth. Whereupon the president's threat was promptly translated into action, and all of the hostages, including many of the most prominent men in Haiti, were murdered and parts of their mutilated bodies exhibited.

OUTRAGE TO FRENCH LEGATION PRECIPITATES AMERICAN INTERFERENCE

Shortly after this slaughter, in July, 1915, Sam's own turn came. Overthrown and deserted by his adherents, he fled to the French legation, asking protection.

Courtesy U. S. Marine Corps

RECALCITRANT NATIVES FORCED TO FOLLOW PEACEFUL PURSUITS

The striped apparel and the armed guard in the background explain why these particular Haitians are engaged in the useful occupation of making straw hats rather than roaming the wilderness as members of "caco" bands (see page 500).

Ascertaining his whereabouts, however, his foes marched to the legation. Disregarding the protests of the French minister, they broke in and dragged Sam forth, killing him and sending his hands and feet and other portions of his body on spears and bayonets to different quarters of the city. An eye witness of the tragedy tells how the progress of several processions through the city could be followed by the cries and shouts of the rejoicing, blood-maddened mobs that followed each grewsome relic.

It was this action which finally forced the landing of American troops in Haiti. Traditionally opposed to interfering in the affairs of its neighbors, the United States had stood for years between the little black republic and the nations of Europe when loans were due and unpaid or when citizens of foreign nations were molested. Urging the sanctity of the Monroe Doctrine, our government had repeatedly settled disputes and adjusted matters so that Haiti might receive extension of credit from its creditors and avoid the forcible coercion its acts threatened to provoke.

The violation of the French legation, however, brought matters to a climax. The French Government put the problem squarely to our own authorities and demanded either that we take action or that they be permitted to do so themselves.

On being assured of our intention to handle the situation, the French contented themselves with landing a small armed guard for the purpose merely of satisfying their national honor by observing the form of landing an armed force on the soil of the nation which had violated the sanctity of their legation.

CHAOS EVERYWHERE WHEN THE UNITED STATES INTERVENES

Accordingly, in July, 1915, American marines and bluejackets were landed in Port au Prince and the United States formally took over the task of bringing law and order and peace to that distracted land.

It is difficult for an American to comprehend the situation which existed in Haiti when our troops first landed. There was no such thing in the island as law and order, or security either of life or property. Armed bands ranged the hills in the interior and robbed all whom they met, leaving a trail of murder and burned villages as they moved from place to place.

In the cities the situation was a little better, but during the period of each revolution the cacos from the hills invaded the towns and murder and destruction of property ensued.

THE ISLAND RAVAGED BY DISEASE

Disease ravaged the island, both the interior and the coast, unchecked. The plague made its appearance at frequent intervals, yellow fever and smallpox ravaged the lowlands, and malaria, the scourge of the tropics, was always present. It is estimated that 87 per cent of the entire population were infected with contagious diseases. Less than 3 per cent of the people were able to read and write and practically all of these were located in the cities of the coast. In the interior, one might travel for days without finding a Haitian capable of even signing his own name.

Due to the instability of government and universal insecurity, banking institutions ceased to function. Virtually no loans were made and business was at a standstill. Chaos reigned in all departments, and to all appearances the entire structure of life in Haiti was on the verge of dissolution. This is a true picture of conditions in Haiti when the United States forces first landed. It is not an exaggerated picture—in fact, many details are omitted which are not suitable for publication in the United States.

Those who desire to confirm the statements made herein and to go further in the study of Haiti and its problems will be well repaid by reading any of the standard works on the subject, such as the classic history of Haiti, "The Black Republic," by Spencer St. John, or that of Marcus Rainsford, both eminent British writers.

After slight skirmishes order was established in Port au Prince by the marines and bluejackets landed in July, 1915, and marines landed in other cities quickly established conditions of law and order along the seacoast.

Meetings of the Haitian Congress were held and a new president, Dartiguenave,

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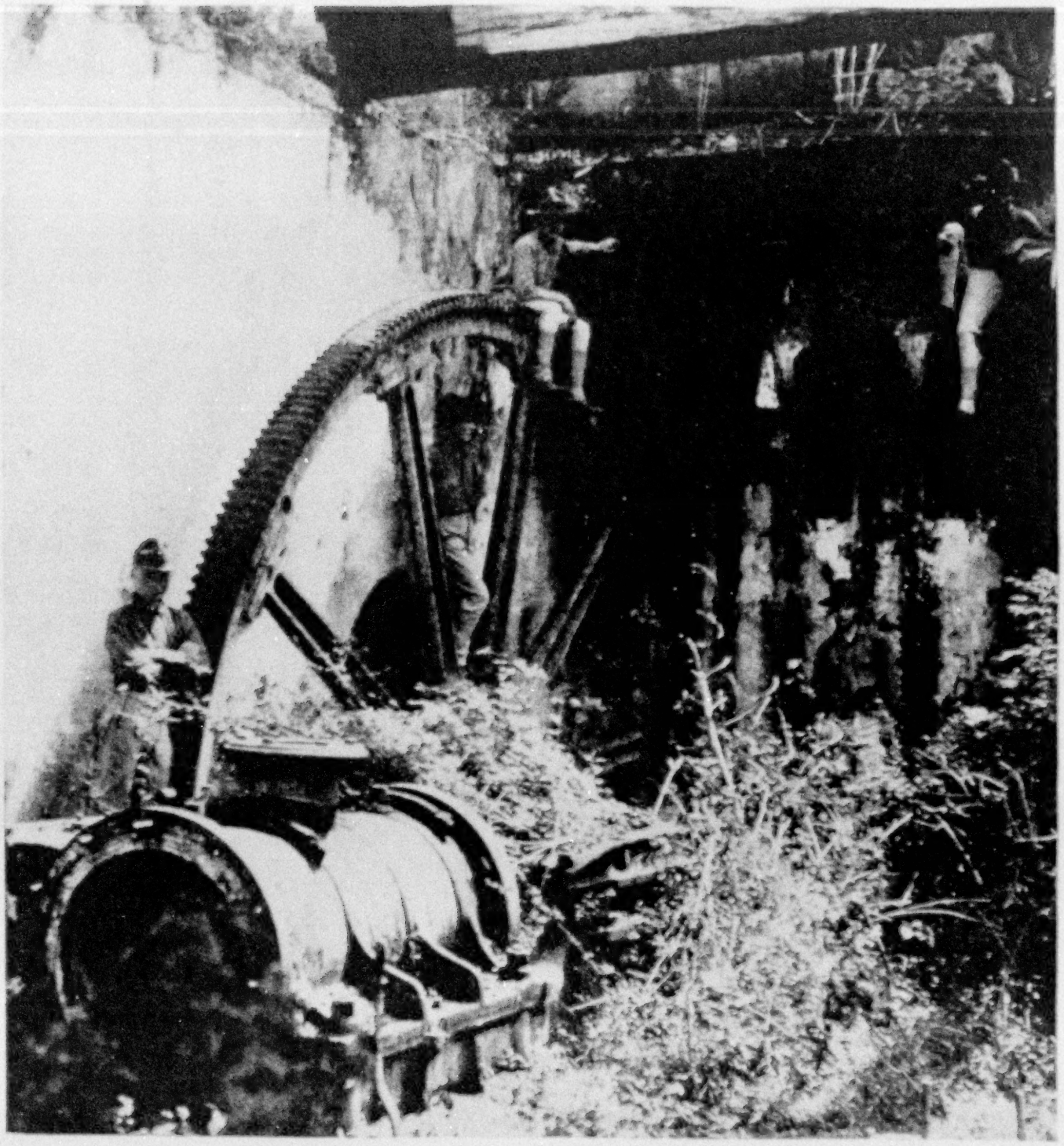

MATERIAL EVIDENCE OF SANTO DOMINGO'S TROUBLOUS PAST

Broken machinery, rusting within the shattered walls of an old sugar mill, mutely tells the story of uprisings on the island of Haiti before the American occupation.

was elected. This gentleman enjoys the distinction, unique in Haitian history, of holding office, undisturbed by revolution or assassin, for a period of more than five years. At the present writing he is still president of Haiti and is not only alive, but is in the best of health.

In November, 1915, both houses of the Haitian Congress ratified the treaty with the United States establishing a virtual protectorate by the United States over Haiti. This treaty was also unanimously approved by the U. S. Senate and ratified by the President in March, 1916.

Following the election of Dartiguenave a presidential proclamation was issued offering amnesty to all political offenders who would give up their arms and return to peace and industry, and a special appeal was made to all the caco leaders to dismiss their bands. A number of them did so, and they received full pardon, while a vigorous campaign was organized against those who refused to come in.

A force of about a thousand marines was busily engaged for several months, at the end of which time Dr. Bobo, the principal leader of the cacos and revolu-

LEARNING LABOR-SAVING METHODS OF ADVANCED CIVILIZATION

Haiti is unequivocally a black republic. For a century there has been warfare between the blacks and mulattoes, with the blacks triumphant.

tionists, was driven out of Haiti and all of the larger bands of cacos were dispersed, as well as a majority of the smaller ones.

A NATIVE GENDARMERIE ORGANIZED WITH THE AID OF MARINES

Thousands of sabers, guns, and revolvers, from the muzzle-loading flintlocks of Spanish days down to the late model Mausers supplied by German conspirators, were captured and dumped into the bay, and, for the first time in its history since the French were driven out, the island enjoyed peace and security of life and property.

To insure the maintenance of order and also to educate the Haitians in the preservation of law and order, a gendarmerie was authorized by the President of Haiti. This gendarmerie is, as its name signifies, nothing more nor less than a police force. It is made up of native Haitians officered by American marines. It has proved an exceedingly useful and efficient force and has been maintained under thorough discipline since its organization.

A NEW ORDER OF CLEANLINESS PREVAILS IN HAITI

"In addition to establishing law and order and security of life and property in Haiti, the United States forces have cleaned up the island in matters of sanitation. Quarantine has been established and visitations of the plague rendered impossible. Yellow fever and smallpox have been wiped out and malaria greatly reduced, while the members of the Marine Corps and the gendarmerie have been and are doing all that is in their power in behalf of general education along lines of modern sanitation" (see page 510).

To the gendarmerie came also another important function. Shortly after its formation its members were made the official paymasters to all Haitian country officials. In this manner graft which had thrived for a century was eliminated.

According to the old Haitian custom, funds for the payment of country officials were delivered to the native head of each district. These native heads would subtract from the total whatever percentage they considered their proper share and then pass on the remainder to the subheads. The subchiefs then in turn would deduct their levy, passing on anything which might remain.

By the time the office-holders and public servants in the country districts were reached little or nothing would remain of the sum appropriated for their payment. As a consequence, since these officials received little or no pay, they rendered practically no service in return.

Under the gendarmerie all this was changed. The gendarmerie officers, who were marines, would deliver to each official his proper pay and allow none to take more. As a consequence, the petty officials who do the actual work of government are now better satisfied than at any other time during the history of Haiti and are trying to render good service.

THE NOTORIOUS CHARLEMAGNE'S REBELLION

Since the original campaign, in which the revolutionists were put down and the caco bands broken up, order has been the rule in Haiti, although there have been several occasions when the fires of cacoism have flared up and considerable local disturbance has resulted.

Much difficulty arose when the United States entered the war against Germany, and Haiti also declared war upon the Central Powers. By that action all Germans were interned and proltibited from conducting their usual activities. As a result the Germans, who had previously possessed great influence in Haiti, were much incensed and endeavored by every means in their power to create disorder. The cacos were stirred up and arms and ammunition supplied them, and every effort was made to employ the German propaganda machine in the United States to create a situation embarrassing the American forces on the island.

One of the incidents arising from this trouble was the attempted rebellion headed by the notorious Charlemagne, who escaped from prison and assembled a large band in the hills of north Haiti.

A man of considerable and unscrupulous cunning, Charlemagne exhibited much intelligence in securing supplies and ammunition from Germans and others interested in promoting disturbances. Due to his military skill and the modern equipment with which his bands were provided, a strenuous campaign was necessary to overcome him.

It was during this campaign that two Marine Corps aviators, Lieut. Edwin G. McFayden and Private Clarence E. Morris, were forced to land near Maissade (November 3, 1919). Lieut. McFayden told Private Morris to stay with the airplane while he went for succor. The landing had been made in the center of a clearing, and he thought that with the airplane's machine gun Private Morris could hold his own until relief came. But Morris got a Haitian to carry the machine gun for him, and was starting back to camp afoot, when the insurgents swooped down upon him, killed him, disemboweled him, and wound his viscera around the machinery of the aircraft. His body was then burned, only the skeleton remaining when another airplane came to succor the disabled one.

Charlemagne and his successor, Benoit, were finally killed and their bands dispersed.

Since that time there has been no disturbance in Haiti. As an evidence of the confidence of the Haitians in conditions, the President recently made a journey from one end of the island to the other in an automobile with only half a dozen companions.

The novelty of this action will be appreciated when it is understood that in the days before the marine occupation no president of Haiti ever left his presidential palace without a guard armed to the teeth and no president went a day's journey into the country without his entire guard, which consisted of 2,000 infantry and several hundred cavalry.

In the five years which have elapsed

THE DRAWING CLASS IN ONE OF THE SCHOOLS OF SANTO DOMINGO

The education of nearly 110,000 Dominican children is in charge of an American colonel of marines. Drawing from models is part of the instruction in the higher grades.

since the American occupation, one thing at least has been achieved. Peace and security of life and property have been given to this island republic, which before the American occupation had not known peace since the overthrow of the French, one hundred years ago.

In addition to establishing law and order and security of life and property in Haiti, the United States forces have cleaned up the island in matters of sanitation. Quarantine has been established and visitations of the plague rendered impossible. Yellow fever and smallpox have been wiped out and malaria greatly reduced, while the members of the Marine Corps and the gendarmerie have been and are doing all that is in their power in behalf of general education along lines of modern sanitation.

Roads have been built from one end of the island to the other and new roads are in process of construction which will render communication easy and possible to all points.

In their work of sanitation and reform, the Americans have been hampered by the fact that they are not officially part of the Government of Haiti, and can do nothing in themselves, but must work by advising the Haitian officials.

Not the least of the many improvements effected by the Americans has been the cleaning of the ports of Port au Prince and Cape Haitien, and the building in each of these places of modern harbors capable of handling the trade of the country. Before the coming of the Americans both of these harbors were in an indescribably filthy condition.

Both ports were unsafe for vessels in many respects, and were festering sores of corruption, full of refuse and dead animal matter, giving forth an odor noticeable many miles at sea. Under the American occupation the ports have been cleaned up and odors eliminated, while concrete wharves and docks have been built which enable steamers to dock for receiving and discharging cargoes with safety and facility.

In addition to sanitation and road-building, street-cleaning has been undertaken in all the towns, sewerage plants

installed, in many cases water plants put into operation, and sanitary regulations put into force.

To assist in the future health and sanitary work of the Haitian nation, a corps of Haitian trained nurses has been developed by the American sanitary authorities. American doctors and nurses have trained Haitian women in the profession of nursing, and, in coöperation with the local physicians, have instructed a number of men sufficiently to enable them to fill acceptably positions as health and sanitary inspectors.

Begun in 1917, this work has progressed favorably to the present. The Haitian women in particular have proved adept pupil nurses, and at present there are several hundred qualified for service in the hospitals of the island and to perform all the duties of the nursing profession in their community.

Hospitals have been built and public works of all sorts undertaken. Not the least of these is the reform of the Haitian prison system. Formerly the prisons were chambers of horrors, where Haitians lay in chains and irons, covered with filth and vermin, without care of any sort. Now the prisons are as clean and sanitary as the barracks of the gendarmerie, who have charge of prison work, and instead of being kept in confinement, the prisoners are put to work on public improvements, for which work they receive regular pay.

Many of the prisoners leave their places of confinement with great regret when their sentence is finished, and there have been quite a number of Haitians who have refused to leave their jails and have committed minor offenses in order to be returned following their release.

In summing up what has been done in Haiti and what must be done if the Haitians are to be enabled to reach the point where they can attain a suitable government and take their place as one of the civilized nations of the world, it must be admitted that much remains to be accomplished.

The United States forces have established law and order in Haiti, a condition which has not existed for more than a century, but little progress has been made toward educating the Haitians in the art of self-government. If the Americans were withdrawn from the Haitian government today, a speedy relapse to the conditions which preceded the intervention would follow.

A DIFFICULT LANGUAGE PROBLEM

In solving Haiti's problems, the first requirement is popular education for the average Haitian. The subject of educating the Haitians is one hedged in with the greatest difficulties, because the language of Haiti is not a written language, but is a development of the negro tongues spoken by the African tribes from which the Haitians are descended.

This language is called creole by the French, and it contains a few French words. It bears no relation to French, however, and a Frenchman is no more able to speak or understand it than an American. Indeed, it varies much in different districts of Haiti and a native of one section has great difficulty in understanding the inhabitants of another. Only a small percentage of the Haitians speak French and even fewer speak English.

The problem of educating the Haitians to read and write is accordingly extremely difficult. Either an alphabet and a way of writing their native tongue must be devised or the entire nation must be taught to speak French or English.

Obviously either of these alternatives presents a task of extreme difficulty, but one or the other must be done before substantial progress can be made by the Haitians toward civilization. One of the greatest services which the United States could render Haiti would be the appropriation of a considerable sum to be applied to education in that republic. Under such an appropriation American teachers could be sent to Haiti, Haitians educated in the United States, and a vigorous campaign conducted.

Such a campaign would parallel the educational work done by the United States in the Philippines, where the problem was largely the same as that which confronts Haiti. As the campaign in the Philippines proved a success, there is every reason to believe that within a similar period equal progress could be made in the Haitian Republic, and within twenty years we should have a people speaking English almost as universally as Haitian.

XUM

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A SIBERIAN PEASANT ENGAGED IN GATHERING FUEL

Siberia is a country of incalculable wealth in natural resources, especially in its forests, its mines, and its agricultural lands, as yet largely undeveloped.

GLIMPSES OF SIBERIA, THE RUSSIAN "WILD EAST"

By Cody Marsh

Ex-Captain A. R. C. with the A. E. F. in Siberia

THE spotlight of public interest is undoubtedly on Russia. The war is over and the world is in the throes of reconstruction. The greatest problem of reconstruction is Russia, because Bolshevism has its home in Russia. Probably Bolshevism is the most sinister and far-reaching menace of all history. Strange to say, the world knows very little about the country that has given birth to such a weird philosophy of government. Less is known about Siberia than about European Russia, in spite of the fact that an American expedition was in Siberia.

Siberia may be called the "Wild East" of Russia. The history of the American "Wild West" would do very well for Siberia, and the only changes required would be mere details of language, costume, and the names of places.

Any one in European Russia who, before the World War, wanted to get away from the respectability of the West, any one who had a penchant for pioneering, any one who wanted room to breathe and a chance to do something and be somebody—all these went to Siberia. Then, too, the Tsars had a way of sending their criminals and political prisoners out there, the latter often including men of exceptional intelligence imbued with the courage to think along lines different from those prescribed by law.

Russian wits used to say that all the interesting people were in Siberia because there were to be found not only the criminals, who at least were daring enough to break the law, but all who thought for themselves and who had been brave enough to think aloud.

OLD GEOGRAPHY IDEAS OF SIBERIA SHATTERED

Siberia in the American's imagination has not only meant exile, but every cruelty of exile. I know my own idea was a land full of prisons. A woodcut in my school geography pictured a poor fur-wrapped creature riding in a Russian "troika," or three-horse sleigh, through snow at least ten feet deep. Out of a black pine forest lean, hungry wolves were running in hot pursuit.

An American woman who had laughed at an Englishman when he complained that during his ten days in New York City he had not seen a single Indian, asked upon her arrival in Vladivostok if there was any danger from wolves in the city. In all my experiences in Siberia I did not see a wolf, nor a pine tree, and what little snow I saw was never more than a few inches deep, though there were sections where it was quite deep. And I saw neither the exile nor the criminal I thought I might see.

I had heard that furs were very cheap in Siberia and was asked to get enough sables for a coat. I matched five little pelts, enough to make one sleeve. The dealer said, "I will make these five a bargain. You may have all five for $1,200." His price was $200 less than he could get in New York, so it was a bargain.

I was not disillusioned about the climate. The American soldier says, "Siberia has two seasons—July and winter." This is nearly true, for there is practically no spring; the foliage does not appear until June. July is as warm as the winter is cold. The brief fall is beautiful indeed, and there is something very thrilling about the intense cold of the winter, when the temperature goes to sixty and seventy degrees below zero in some sections.

Everybody dresses and prepares for the cold, and on the whole I was more comfortable in the steady winter of Siberia than I have been in the changeable American winter.

Were I a poet I should write a book of verses about the wild flowers of Siberia. There is a wild rose that blooms hugely on big, sturdy bushes. Then there is the mauve and gold of the "Mary and John," that is loved most by the Siberians. This

XUM

Photograph by Garner Curran

A VIEW OF VLADIVOSTOK LOOKING TOWARD THE NORTHEAST

The city spreads out at the foot of many hills. In the vicinity are barracks sufficient to house an army of half a million men.

XUM

Photograph by Garner Curran

A PANORAMIC VIEW OF VLADIVOSTOK LOOKING NORTH

Before the war, Vladivostok had a population of 60,000, but since the troubled days of the Russian Revolution the number of its inhabitants has fluctuated in an amazing manner, owing to the influx of tens of thousands of refugees. At one time more than half a million persons were congregated here.

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THE THIEVES' MARKET IN VLADIVOSTOK—ONE OF THE MOST INTERESTING QUARTERS OF SIBERIA'S GREAT SEAPORT

This section of the city is all that the name implies.

XUM

Photograph from Horace Brodzky

THE CORN BAZAAR AT KIAKHTA, SIBERIA

Here many races meet. The man in the foreground is a Tatar. The two sitting in the right background and wearing caps are Russians. The man in a skirt is a Buriat. The unshaven one at the left is a Jew.

Photograph by Garner Curran

THE POST-OFFICE, ONE OF THE MANY SUBSTANTIAL PUBLIC BUILDINGS IN VLADIVOSTOK

The exterior of such structures is deceptive. Many of the public buildings in Vladivostok are a sore disappointment from the inside, for they lack modern conveniences and are poorly finished.

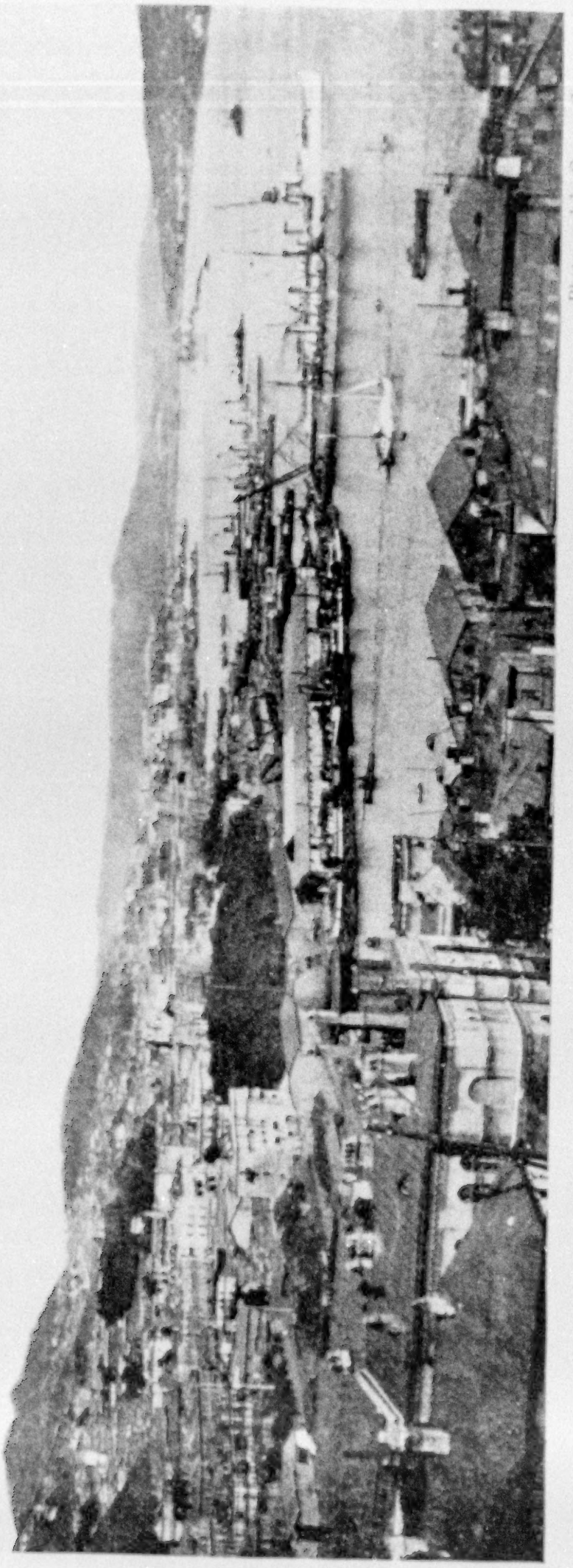
lovely flower is named after the Virgin Mary and the Loved Disciple.

Nature seems to have planned a passing panorama of blossoms to delight the outcasts and pioneers living in the thinly populated wastes of Siberia. Every week, it seemed to me, there was another program of wild flowers for the view from my window; all summer and fall they suggested ever-changing tapestry wrought on a background of verdure, hills, and water.

SIBERIA IS STEEPED IN THE COLOR OF THE EAST

Siberia is, above all, an oriental country. Out there the traveler sees every phantasmagoria associated with the East. Oriental sunsets, equal to any and inferior to none, thrill the senses with splendors of color ranging from volcanoes of rubies down to the myriad mysteries of the kaleidoscope. Then one sees all the peoples of the Orient — Chinese, Japanese, Tatars, Manchus, Koreans—men and women of every color and condition.

For the most part, the Russians have Russianized the country. Even so, one could easily believe the Tower of Babel incident to have occurred in Siberia, for one hears so many languages and sees so many different national customs. Chinese "sampans" and Japanese "dambes" ride the roadstead of Vladivostok along with Russian craft and American motor-



A VIEW OF VLADIVOSTOK HARBOR LOOKING EAST

Photograph by Garner Curran

The city skirts the harbor in shoestring fashion, with one main avenue running the entire length. The best engineers planned it and the cheap coolie labor of the Orient did the work.

Photograph from Major General A. W. Greely

WHEN FOOD WAS PLENTIFUL IN SIBERIA, BEFORE THE BOLSHEVIST DEBACLE

Photograph by Garner Curran

THE BREAD LINES IN VLADIVOSTOK ARE NOT INFREQUENTLY TWO BLOCKS LONG

boats, and on the highways and caravan routes camels and oxen are passed by modern automobiles, mostly of American make.

One gets wonderfully attached to Siberian life. There is something charming and fascinating about it. I was evacuated to Manila with more than a thousand American troops, and during my three months' stay in the Philippines I repeatedly heard the men express a longing to be back in "dear old 'Vladi'." The natives, in spite of the scourges of typhus and cholera, in spite of the hunger and cold which they have experienced so frequently during the last six years, are devoted to their home land; yet apparently they are indifferent to the rich opportunities of their country.

Siberia is a land of rich agricultural potentialities, in spite of the shortness of the summer season, and even American tables have been served with Siberian cheese and butter. But the most alluring opportunities of the country are presented in its mineral wealth—gold and silver and precious stones.

A REMINDER OF OUR WEST OF EARLIER DAYS

There is so much in Siberia that reminds an American of our "Wild West" of earlier days, whether it be lawlessness, freedom, opportunity, a place to live life over again, great distances, vastness and gloriousness of scenery, or barrenness such as is seen on the Gobi Desert, where the camels graze.

And there are many features that may be described in typical American superlatives! Vladivostok has the finest harbor in the world; the railroad connecting Vladivostok with Petrograd is the longest in the world—thus the Siberians rave, and not altogether madly. But they cannot rave about their roads. The Russian word, "doroga," meaning "road," literally means, "bad road," and it would be redundancy to speak of a bad "doroga." It merely means a place where you *may* get through. But what an amazingly wealthy people they will be when they get roads suitable for automobile trucks and some lines connecting with their already wonderful transcontinental railway!

The cities of the Russian "Wild East" are not particularly populous, but each one boasts of sufficient beautiful churches, government and private edifices to give it a noble aspect. First comes Vladivostok, a combination of Gotham and Chicago. At the other end of the country is Omsk, the capital. In between and top and bottom are Tomsk, Ekaterinburg, Cheliabinsk, Chita, Xabarosk, Irkutsk, Harbin, and Nikolsk. One of the most objectionable features about these beautiful cities is their filth and the attendant odors. I once mentioned this deprecatingly to a Russian woman who had traveled much. She sharply reminded me that the variegated stenches of the Chicago stock yards, the smoke of Pittsburgh, and the pungent gasoline stench of New York's Fifth Avenue still held first places in her superlatives of city smells.

VLADIVOSTOK, THE LARGEST AND MOST INTERESTING CITY IN EASTERN SIBERIA

Tomsk has an unusually beautiful cathedral and a great university, that has produced more than one famous name, Metchnikoff, the great bacteriologist, being one of them.

Vladivostok, the largest and most interesting city of eastern Siberia, owes much to Russia's loss of Port Arthur, for that misfortune increased the Tsar's interest in the more northerly seaport until he had made it worthy of its name, "Ruler of the East." The one disadvantage of Vladivostok is that its harbor is frozen during several months of the year. In spite of this drawback, I believe it is conceded that Vladivostok possesses the second finest harbor in the world, and it is claimed that from a military standpoint the city was second only to the Dardanelles.

Whatever lessons the Tsar learned from the Russo-Japanese War, Vladivostok proves that he had determined not to be caught napping again. Batteries of large defense guns and concrete emplacements for many more guard the mouth of the harbor. From the water front to a point many miles inland are numerous lines of defense. Many of the hills are full of ammunition, and aërial railways were constructed to carry it to the guns. The harbor is equipped with machine-shops, floating dry-docks, stationary dry-docks, a naval base, hoist-

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A MACHINE-GUN IN THE HANDS OF STALWART SIBERIANS

Photographs by Cody Marsh

THIS IS THE TYPE OF MOTOR TRUCK USED BY THE BOLSHEVIKS IN THEIR RECRUITING CAMPAIGNS IN VLADIVOSTOK

Photograph by Cody Marsh

THE TRAVELING SOUP KITCHEN AT ONE OF THE SIBERIAN WAY STATIONS

During their famous trip across Siberia the Czech soldiers succored the starving natives. The man in the doorway is the chef on one of the Czech cook cars.

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THE SOAP-BOX ORATOR USES AN AUTOMOBILE IN VLADIVOSTOK

The building in the background is the railroad station.

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THRONGS BEING HARANGUED BY BOLSHEVIK ORATORS DURING THE MIDSUMMER RIOTS AT VLADIVOSTOK

Note the gallery of onlookers perched on the cornices of the railroad station.

ing-cranes, and shed after shed of supplies.

The shores are lined with rotting hulks of submarines, torpedo-boats and destroyers, tugs, and many other kinds of naval gear and equipment. On the floor of the harbor rest expensive automobiles and other material which had been unloaded on the ice during the last year of the war and allowed to sink with the spring thaw, during Siberia's period of chaos.

The city spreads out at the foot of many hills and rises into a beautiful and sudden spectacle, as one's steamer makes a turn in the approach from the sea. A cathedral with many golden domes occupies a place of vantage, and everywhere rise huge stone and brick barracks, mostly white, with an occasional pile in red brick for contrast.

BARRACKS, BARRACKS EVERYWHERE

All around the city are barracks, barracks everywhere. It is said that there are sufficient barracks in and around Vladivostok to house an army of half a million men. These barracks are substantially built and provide protection against the heat of July as well as the cold of winter. Even out in the country, beyond the suburbs, where one begins to feel he is away from these structures, a sudden turn around a hill reveals another string of two-story brick barracks, including chapel, officers' quarters, and stables. When the Allied expeditions arrived in Siberia these buildings were not only found in numbers at Vladivostok, but in all other Siberian cities of importance.

There are numbers of institutions of learning in Vladivostok, notably the Oriental Institute and the Commercial School, while the noble Zemstvo building, apartment houses built for officers and their families, and many fine private residences lend architectural distinction to the city. The fine pile occupied by the American Army Headquarters was built for a German department store.

The city skirts the harbor in shoestring fashion, with one main avenue, the beautiful Svetlanskaya, running the entire length, ending in a popular bathing establishment, where the Siberians gather in great numbers.

The Tsar's advisers had thought of everything in building this city—religion, education, amusements, hotels, homes, and everything needed by the military. The best engineers planned it and the cheap coolie labor of the Orient did the work. Two large department stores would do credit to an American city of the first rank, and I was pleasantly surprised in the variety of articles that could be purchased.

A CITY OF SENSATIONAL HEADLINES

An American sensational newspaper could get plenty of headliners in Vladivostok. The city is "tougher" in fact than any of our cities has ever been in reputation. Let me give an extract from my diary for one day: "July — saw an American doughboy in an ambulance. He had been wounded in a brothel brawl on 'Kopek Hill.' Rode out to Second River to see Lt. ——. At the little bridge where the road turns to go through the railroad yards I saw the body of a nude woman lying in the mud below. There was a nasty hole in her head. Nobody seemed to pay any attention to her.

"On the way back through the city my car was stopped by a huge crowd in front of Czech headquarters on Svetlanskaya. Standing up on the hood I saw a policeman searching the clothes of a nude Korean. Nobody, not even the woman standing close at hand, seemed to be aware that the poor devil was naked. I asked Pietro, my Russian driver, to get the facts. He came back grinning and said the woman had been robbed of her purse and had chased this Korean, who was finally caught by the policeman. The usual method of search failing, the Korean was ordered to strip and the purse was found. Shortly the crowd broke up and the Korean nonchalantly dressed himself.

"Just as I was turning into the drive leading to Barracks No. 7 I noticed that the stone wall holding the embankment on the other side of Svetlanskaya had caved in, and as I looked I saw the body of a baby, which some poor mother had put there for want of a better form of burial.

"After supper I heard that General K—— of the Ussuri Cossacks, had captured, or rather kidnapped, Colonel ——

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RUSSIAN PEASANTS CARRYING PLACARDS DURING A BOLSHEVIST CELEBRATION

The five thus paraded from left to right are: Lenine, Sukhanoff, Karl Marx, Lumacarsky, and Trotsky.

XUM

© Kadel & Herbert

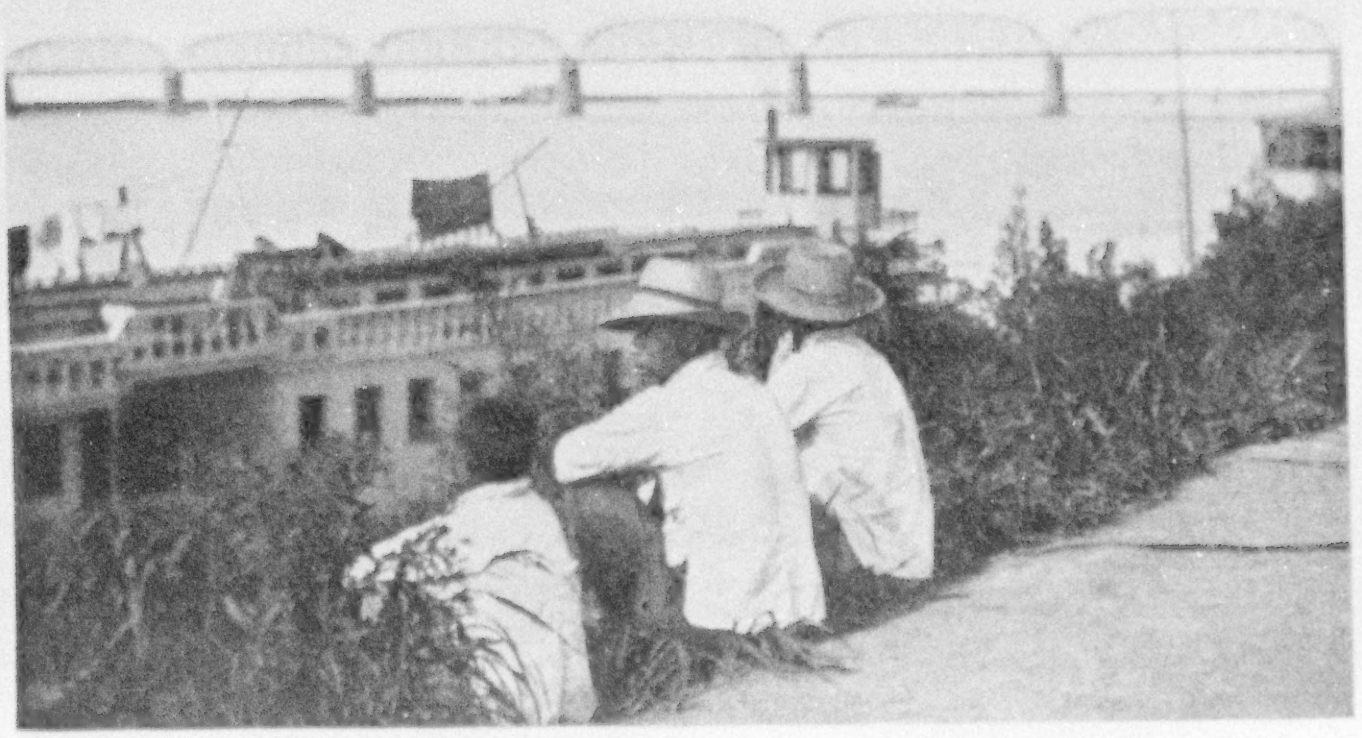
A RED ORATOR ADDRESSING AN INDIFFERENT AUDIENCE ON THE OCCASION OF THE THIRD ANNIVERSARY OF THE RED REVOLUTION

Note especially the unmilitary bearing of the trooper at the extreme left. With his shako crushed down over his head, he seems to suggest that the Tsar's prohibition regulations have not been the law of the land during the Bolshevist régime.

Photograph from Horace Brodzky

WAITING FOR THE FERRY AT IRKUTSK

Irkutsk is situated on the Angara River, 2,000 miles west of Vladivostok and 44 miles from Lake Baikal. It is one of the important cities on the Transsiberian Railway and was founded in 1652.



Photograph by Maynard Owen Williams

THE BRIDGE OVER THE SUNGARI AT HARBIN

In the days of the old régime, armed guards were stationed at each end of this bridge and small boats lay in the stream above and below it with orders to shoot on sight or sound, after sunset, as the breaking of this bridge would have separated Vladivostok from Petrograd. Many ignorant Chinese boatmen were shot by the guards when they unwittingly floated down with the current and came too near the structure.

THE SIBERIAN PROTOTYPES OF MARY'S LITTLE LAMB

Photographs by Cody Marsh

RUSSIAN CHILDREN BATHING NEAR VLADIVOSTOK

One of the popular bathing establishments of the great seaport is at the end of a beautiful avenue known as Svetlanskaya, where the Russians enjoy the surf in the Siberian fashion.

Photograph by Cody Marsh

THE BRICK STOVE IS ONE OF THE MOST STRIKING FEATURES OF THE SIBERIAN HOME

in front of our gate, after which he took him to his private armored train, shot him, and threw his body from the train."

SHOPPING FOR A SAMOVAR IN THE THIEVES' MARKET

The city market-place is a most interesting spot. There is a Russian section, a Japanese section, and one occupied by Chinese. Then there is a section known as "The Thieves' Market." It is all that its name implies but I did not know this when I first stopped there. I went in search of a samovar. The Russian says, "What is home without a samovar" just as I used to say, when a small boy, "What is home without a rubber plant?" or as the modern American boy might say, "What is home without a phonograph?"

A charcoal fire is built in the samovar and water is kept hot for the tea that is drunk every few minutes, it seemed to me, during the day. A small tea-kettle of strong tea is kept hot on the top of the samovar. Some of this is poured into a glass and then thinned down with hot water from the samovar. Because the samovar was to me the one distinctive accessory of Russian life, I selected it as the one memento of Siberia I wanted to take home. So I went to "The Thieves' Market" in search of one.

None of the booths had what I wanted. My requirements specified a very large one, with a Russian crest on it and some Russian motto engraved on it. Finally one man said that by Saturday he could have what I sought. This meant, as I found out later, that he would have one stolen to suit me.

I returned Saturday with a Russian friend who had lived in America. Soon my eyes feasted on a huge samovar, large enough to provide tea for a brigade. The thing was literally covered with shields and crests and Russian mottoes. I was convinced that this samovar had been in the Tsar's Winter Palace at the very least. My Russian friend looked on quite scornfully and finally blurted out, "Certainly you are not going to buy that piece of junk!" I replied quite haughtily that I certainly did intend to buy it if I had to mortgage the farm.

With that he yanked the samover from the merchant, turned it upside down and showed me, carved in plain English, "Made in Waterbury, Conn." That was Exhibit A. Then for Exhibit B he explained that these many crests and shields were medals that this particular brand of samovar had taken at various fairs, and the Russian texts were merely legends

explaining what the medals were. I was really sorry I had him along, for I would rather have kept my illusion and bought the samovar.

THE NIGHT LIFE OF A RUSSIAN CITY IS NEVER DULL

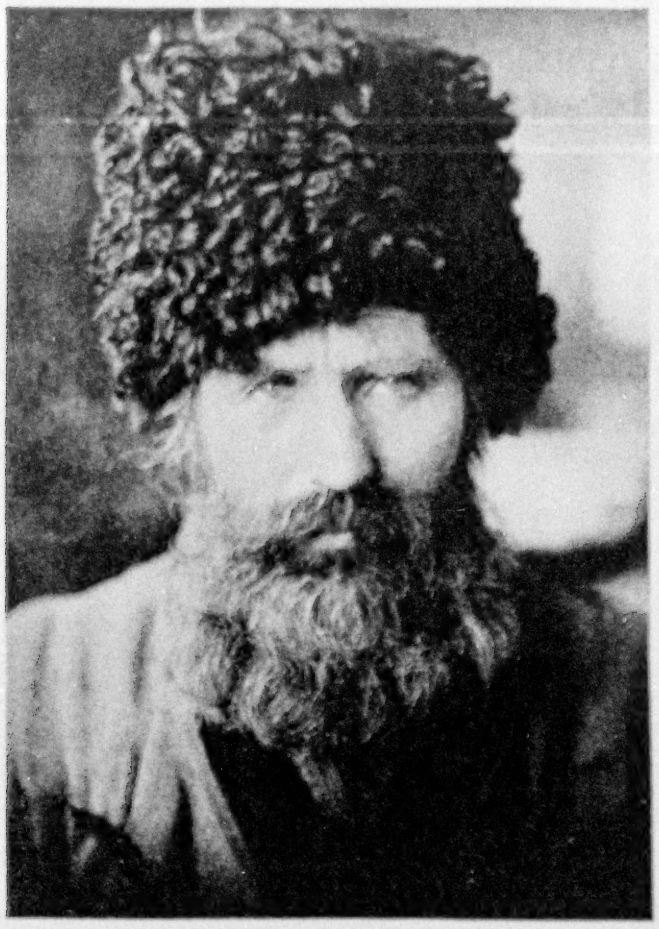
However dull a Russian city may be by day, it is never dull at night, for the Russian blossoms out at his best after dark. There was one cabaret in Vladivostok that did not open until one in the morning. And yet, strange to say, no matter how tough the cabaret, no one ever sees anything lewd on the stage or hears trashy music, unless it is American "jazz," played as the tribute of hospitality to American patrons. Russians have too keen an appreciation for beautiful dancing and real music to tolerate anything unchaste in their enjoyment of these arts.

During the last two years Vladivostok seemed to be the Mecca of the thousands of refugees who came in a never-ending stream from every part of Russia and Siberia. This was due to the ever-recurring political upheavals. Every city along the Transsiberian Railroad had its thousands of refugees, but they were always en route to Vladivostok. In Omsk there were some hundred and fifty thousand refugees living in ten thousand freight cars. I have had to climb over hundreds of them sleeping in railroad stations to get to the station-master's office.

A CITY OF REFUGEES

Vladivostok normally had a population of sixty thousand, but at one time it is said there were more than a half million persons in the city. They lived in every conceivable abode.

All around the seaport villages sprang up as if by magic. But the houses were poor, contemptible things, made out of tin cans, the wood of packing cases, mud—in fact, anything that could be held together by any means and that would keep out the cold. These poor folks seemed to feel fairly secure in Vladivostok, where the forces of the Allied expeditions kept things going after a fashion. Many of them hoped to reach Japan or America eventually. Their only nourishment, as far as I saw, was black bread and tea; and what an emaciated and sickly lot they were! They never had sufficient clothing, even in mild weather, and the fact that so many survived is attributable solely to the remarkable ruggedness of the Russian physique.



Photograph by Cody Marsh

A CITIZEN OF RUSSIA'S WILD EAST

Even the poorest peasants in Siberia seem to have the instincts of courtesy, and their hospitality knows no bounds if they like you.

In addition to the refugees who lived in freight cars and huts, there were those who had no homes. I often saw families curled up on door-steps, away from the zero wind, the little bare legs of children sticking out like the tails of snakes, coiled together to keep warm. But how patient these poor things were in all their sufferings!

I have told much of Vladivostok because it is the key to Siberia. It is the beginning of the Transsiberian Railroad, and everything intended for Siberia enters there. The only other gateway is through Manchuria to Harbin.

THE RUSSIAN IS A GOOD LINGUIST

While there are several phases of life at Vladivostok that are cosmopolitan, one finds in this city the Siberian atmosphere at its worst and at its best; other com-

Photograph by Cody Marsh

THE TEA-KETTLE IS THIS YOUNG SIBERIAN'S MOST VALUED POSSESSION

The tea habit is as firmly intrenched in Siberia as in European Russia.

munities reveal more of what is best in Siberia and not so much of what is worst.

A large percentage of Russians have some knowledge of the German language and most educated Russians know French. It is said that many wealthy and well-educated Russian families habitually use French for mutual intercourse in the home and leave Russian for their dealings with the servants. The Russian is a good linguist. I believe he learned English faster than we learned Russian during the stay of the A. E. F. in Siberia; but, in my opinion, the Russian has to be a good linguist to speak his own language. This is not an aspersion on the language; on the contrary, it is a beautiful and very expressive one.

It is possible to pick up in a short time enough Russian for the ordinary transactions of a day; but this will mean a child's vocabulary and no grammar. The language has no article like the French, but it has about thirty-five letters. The Bolsheviks are proposing to eliminate many of these letters.

RUSSIAN HOMELIFE AND COOKERY

Instead of many tenses, there are "aspects," many declensions, and intricate prepositions. The most attractive feature about the language is its wealth of polite and gentle words and its interesting form of address. I love to have a Russian address me as "Cody Andreivitch" (Cody, the son of Andrew).

It is trite to say that the Russian home life is beautiful. But nowadays we read so many blood-curdling stories about the Russians and their Bolshevist excesses that I want to say that I have lived with Bolshevik Russians of the reddest dye and have found them among the gentlest and most lovable people I have known. Even the poorest peasants seem to have the instincts of courtesy, and their hospitality knows no bounds, if they like you.

If a family can afford something beside the diet of black bread and tea, the guest in a Russian home has a treat in store, for the Russian housewife is a wonderful cook.

The Siberians make much of their "cold table"—raw fish, caviar, salads, and that delicious crab whose meat gives no nightmare, indigestion, or headache.

Their best dish is chicken, prepared in a most unusual way. Butter is laid thickly on a bone; layers of light and dark meat are wrapped around it; then the whole is rolled in egg and crumbs and baked. It makes a small "ham" of chicken and is very tender. One must be careful in cutting into it lest the hot butter spurt out beyond the plate.

The Russian is a heavy meat eater, due largely to the fact that there is an abundance of game, pheasants being cheaper than chickens, and in some places venison is cheaper than steak. In the palmy days the Siberian table must have groaned.

Russian architecture is unmistakable. A house, a church, a factory, or just a plain shed will show the touch of the Slav. Russian elements are noticeable in the windows and doors, in little and big lines of decoration, as well as in the general plan and shape of a building. No matter how poor the cottage may be, there is something distinctive about it. Even those miserable little refugee shacks built of tin cans filled with mud "sported" a Russian cornice, or a Russian window frame, though these racial architectural touches meant much extra labor. The Russian architecture is unique, in that it can carry a lot of what we call "gingerbread" and not appear cheap, trashy, or bizarre.

I often wondered what people did for a living, what they did to earn even their black bread and tea. The government employed a few in the machine-shops and some worked on the railroad, and many more were soldiers; but this did not begin to account for all. In the days of the Tsar most of the men were farmers; but farming has become a thing of the past. Because of the ever-changing conditions and the perpetual civil war, farmers have been afraid to risk the expense and labor of putting in a crop. Cows disappeared to such an extent that almost everyone resorted to canned milk.

But the Siberians are informing themselves about tractors and other farming machinery, and when they can devote their energies to agriculture again they will produce much to satisfy the world's hunger.

Photograph from Cody Marsh

THE AUTHOR SURROUNDED BY A GROUP OF SIBERIAN FEMININE TYPES

THE COSTUME OF THE SIBERIAN

The dress of the Siberian Russian differs from ours in that the woman always has a platok, or colored handkerchief, of some sort on her head and white shoes and stockings on her feet. The distinctive article of the man's dress is the robashka, or shirt, which is worn outside the trousers. The neck and front of the garment are generally beautifully embroidered and a rope-like girdle confines it at the waist. These are not the native Russian costumes, but the costumes worn for the most part at the present time.

Photograph by Cody Marsh

IN A SIBERIAN SCHOOL ROOM

The average Russian is a good linguist. His own language has thirty-five letters, but the Bolshevist authorities have proposed eliminating some of these.

Russians in Siberia are enthusiastic about American clothes, particularly American shoes. They want American automobiles and American machinery of all kinds, and they delight in American "movies."

The Russian Church had a hard time during the revolution. Most of the priests had to go into hiding, though this was not so nearly universal in Siberia as in European Russia. Many of the people looked upon the established Church as the twin brother of the civil tyranny. They did not hate religion, but they hated the privilege and ease of the clergy, and the tribute of money and labor they had to pay to the Church.

When the revolution struck the Church, the real men among the priests passed through the fire. They gained some knowledge of the needs of the people and many of them are doing a noble work now. The Church had an astonishing calendar of holy days, "prazneeks." Even the godless still keep these. When a Russian celebrates a prazneek he celebrates! He would not dream of working, but gives himself up to a good time.

The religious prazneek is the only form of sport the Siberian knows. A few people play tennis and almost everybody swims and swims well, but otherwise they do not seem to have any interest in athletics or exercise. They are as naïve as children, but brave—the women as brave as the men and as strong.

GENTLENESS AND STRENGTH DISTINGUISH THE SIBERIAN

The outstanding characteristics of the Siberian Russian are his physical strength and stamina and his gentleness of nature. Most people will be surprised at the second part of that statement, on account of what has been published about the Bolshevist cruelties. It is true that the peasant went from the extreme of an absolute monarchy to the most fantastic socialism the world has known. Nevertheless he is gentle and forgiving by nature.

Of course, Siberia did not taste the full bitterness of red Bolshevism. The extreme elements were present, but they never had full swing. Red Bolshevism in Siberia never was more than "pink," and that pink is becoming paler every day. They call themselves "Social Democrats" in Siberia, and while they have a working understanding with Soviet Russia, their tendency is to work out their civil salvation on their own lines independent of Petrograd and Moscow. The Siberians wonder why the powers do not approach them with a trade agreement of some kind.

The allied armies failed because they hurt the Siberian's pride by their very presence.

THE SOUL OF SIBERIA

Because of faulty sanitation, Siberia is ravaged by typhus and cholera. I once visited a hospital in one small city where there were two thousand cases of typhus, while in the freight yards there were three thousand additional cases, and not a doctor or nurse. The hospital dispensary boasted of a few small bags of herbs and that was all. All the doctors except two and nearly all the nurses had been stricken with the plague.

One ward in which two hundred persons were ill had one nurse in attendance. When the commandant took me through we found this little nurse in a heap on the floor, crying. I asked her why she was crying, thinking she was stricken also. She replied that she was quite well, though very tired, but her heart was aching for those two hundred sick men because she could not get around to all of them to bring them their medicines or nourishment, and they were too sick to help themselves. Then, as she broke into an agonizing sob, she cried, "Oh, why didn't the good God give me twenty bodies for this heart that would do so much!"

Her name was Tania and she was only seventeen. All the members of her family had been destroyed, but hers was the soul of Siberia, for there are many like Tania in Russia's "Wild East."

So one is not surprised that some 500 men out of an expedition of only 7,500 Americans married Siberian women.

IN A SIBERIAN PRISON CAMP

While in this plague-stricken city I visited the prison camp of 6,000 German, Austrian, and Hungarian prisoners of war. It was my pleasant duty to bring them flour and medical supplies. For

Photograph from Cody Marsh

THE SIBERIAN CHILD'S ENTHUSIASM FOR SWEETMEATS AND KNICKKNACKS IS NO LESS MARKED THAN THAT OF YOUNG AMERICA

three days previous to my arrival they had had nothing to eat except some bowls of hot water, with a few cabbage leaves for flavor.

The sick were suffering greatly for want of medicines. The Russians could give them nothing because they had nothing to give; and I believe the officials were as grateful as were the war prisoners for the timely aid, for the venom of the World War was a thing of the past.

When the "pink" Bolsheviks, or Social Democrats, got control of Siberia last January one of their first official acts was to free all of these prisoners and give them at least a chance to shift for themselves.

A BASIS FOR FRIENDSHIP BETWEEN AMERICA AND SIBERIA

Every one remembers how the Czechoslovak prisoners of war, when released by the Russians, organized an army and fought for their erstwhile captors. When the Bolshevik specter came, this little army went from Samara to Vladivostok under the "Boy General" Gaida and swept Siberia clean of the Bolshevist menace for the time being. Siberia owes it to this little army that she has not known the cruelties and exaggerations of red Bolshevism; and the Czechoslovak Republic likewise owes much to this little army. The bravery and accomplishments of these lithe, disciplined men undoubtedly gave impetus to the national aspirations that finally realized a new democracy.

Americans will be gratified to know that the behavior of the American Expedition has laid the foundation for a wonderful friendship between America and Siberia. We did not gain this favor by prowess at arms, but by our ability to mind our own business. While many of us never knew why we were over there, we know that we left with the good will of the Siberians. The only sense in which they were glad to see us go was in the sense that a man would like to have even his best friend out of the house while he settles a little quarrel with his wife.

Victrola

REG. U. S. PAT. OFF.

Will there be a Victrola in your home this Christmas?

If any one thing more than another can add to the joys of Christmas, it is music—and the Victrola can bring into your home, any music you may wish to hear.

The Victrola is the one instrument to which the greatest artists have entrusted their art—an unanswerable acknowledgment of its artistic achievements. Moreover, the Victrola is the only instrument specially made to play the records which these great artists have made.

Christmas Day and any other day through all the years to come, the best or the newest of all the world's music may be yours to enjoy.

By all means get a Victrola this Christmas, but be sure it is a Victrola and not some other instrument made in imitation. $25 to $1500. Victor dealers everywhere.

Victor Talking Machine Company
Camden, New Jersey

"HIS MASTER'S VOICE"
This trademark and the trademarked word "Victrola" identify all our products. Look under the lid! Look on the label!
VICTOR TALKING MACHINE CO.
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The BELMONT
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One of the great hotels of Pershing Square

JOHN McE. BOWMAN, *President*

OPPOSITE GRAND CENTRAL TERMINAL

Hand your bag to the Red Cap and say "Belmont"

JAMES WOODS, VICE-PRESIDENT AND MANAGING DIRECTOR

ITS quiet, conservative luxury makes a universal appeal. It has always been particularly attractive to men and women prominent in the business, financial and professional worlds.

The Belmont is famed architecturally for the restfulness and beauty of its interior, the accessibility of its public rooms, and its absolutely fireproof construction. Every modern comfort and convenience, with the concentrated effort of expert management along personal-service lines, makes it mean Home to the traveler in New York.

As with the other Pershing Square Hotels, the traveler arriving at Grand Central Terminal goes directly to The Belmont without taxicab or baggage transfer. Close to theatres, clubs, libraries, music and art exhibitions; but a step from Fifth Avenue—the heart of the fashionable shopping district. Surface cars and elevated at hand. Direct indoor connection by subway with all parts of the city.

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Adjoins the Grand Central Terminal

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Grand Central Terminal
"Get off the Train and Turn to the Left"

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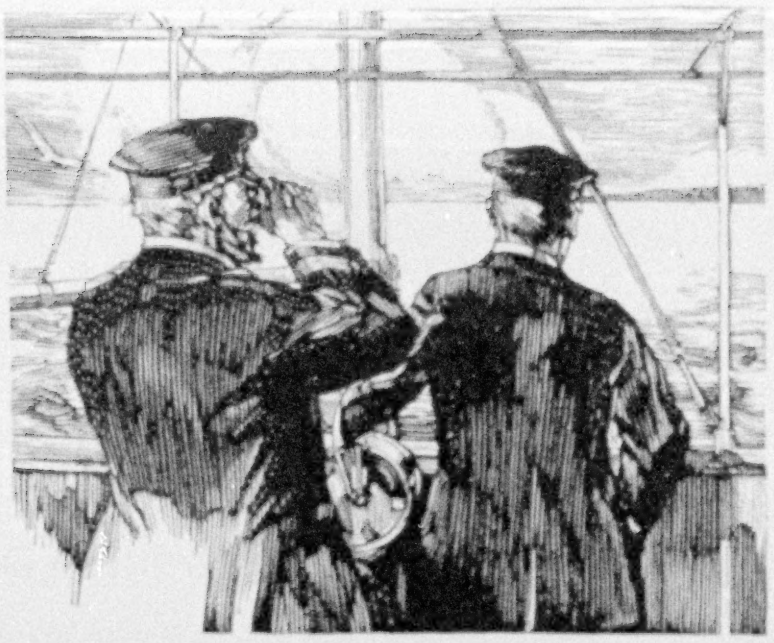
JAMES WOODS, VICE-PRES.
A Short Block from the Station

The Ansonia
EDW. M. TIERNEY, VICE-PRES.
Broadway at 73rd St. In the Riverside residential section

PERSHING SQUARE HOTELS, NEW YORK



The best Captain employs a skilful pilot

THE deep sea captain takes on a pilot to guide him through New York Harbor. Likewise the careful investor seeks experienced guidance in choosing the best channel for the investment of his funds.

The National City Company is in constant touch with the whole investment field through its investigating departments. The concrete results are assembled in a monthly purchase sheet which lists only such investment securities as the Company decides to purchase and to recommend.

This list may be had at any one of our 50 offices in leading cities, or will be mailed direct to you on request for AN-146.

The National City Company

National City Bank Building, New York

Facts for
CAREFUL INVESTORS

OUR book, "Men and Bonds," giving information on the following subjects, will be sent on request:

Why we handle only carefully investigated investment securities.

The wisdom of purchasing securities from a Company large enough to maintain far-reaching investigation service.

The importance of buying investment securities from a house with more than 50 offices and international connections and service.

Why the careful investor selects securities from a broad range of offerings.

How 10,000 miles of National City Company's private wires keep our offices in leading investment centers of the country in constant touch with our New York headquarters.

Your advantage in dealing with a Company whose representatives talk with an average of 3,000 banks a day.

Why these sales representatives are especially qualified to helpfully discuss your individual investment needs.

For a copy of this book, address our New York office, asking for AN-139.

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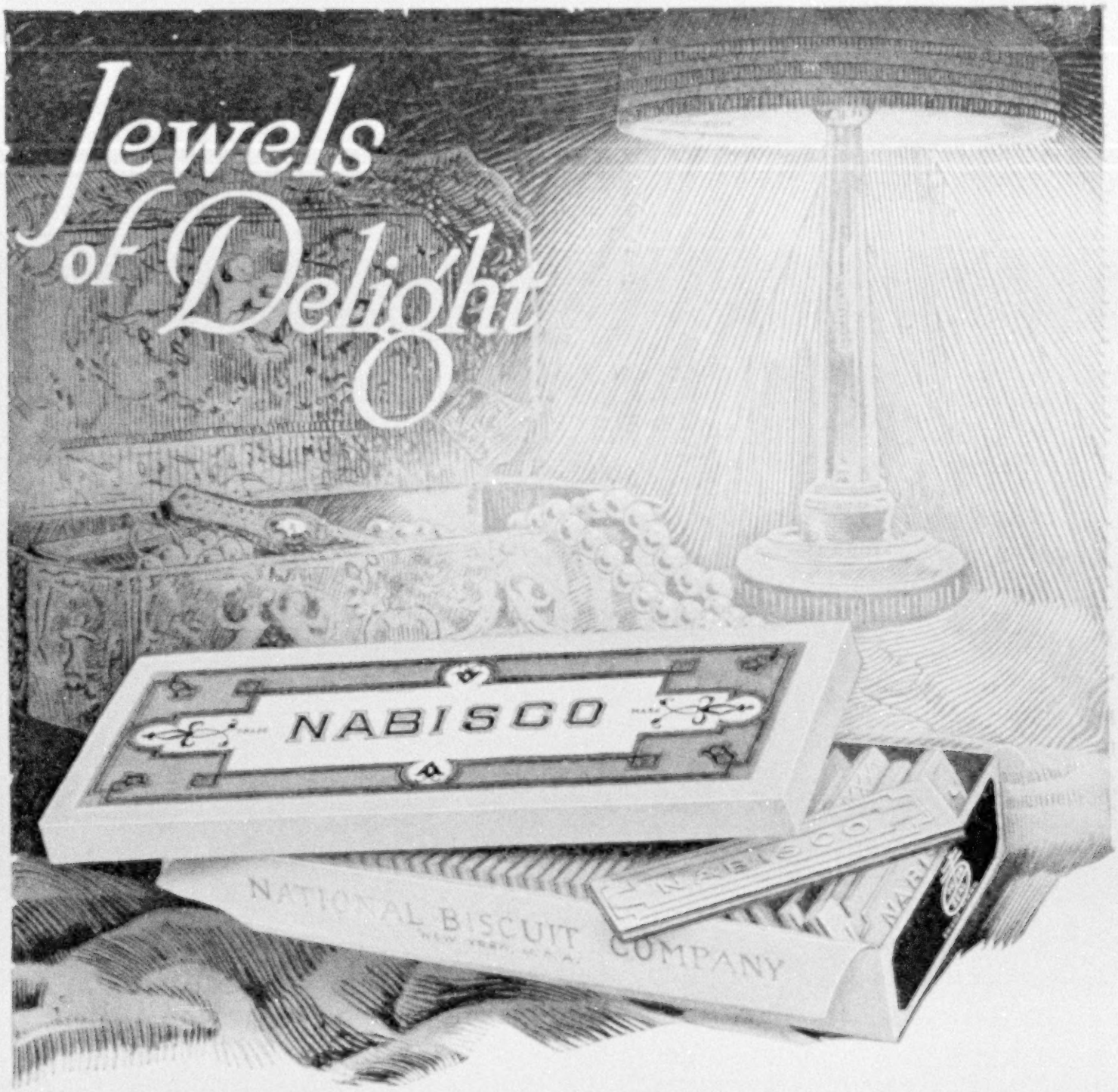
ACCEPTANCES

THE NATIONAL CITY COMPANY
NATIONAL CITY BANK BUILDING
NEW YORK



TWO golden wafers of filigree texture, inlaid with a rare creamy center of surpassing goodness. These are NABISCO, the jewel food that lends a touch of added charm and pleasure, whether the setting of hospitality be simple or elaborate.

Brilliant when served with beverages, fruits, ices, creams, sherbets, or alone.

Sold in the famous In-er-seal Trade Mark package

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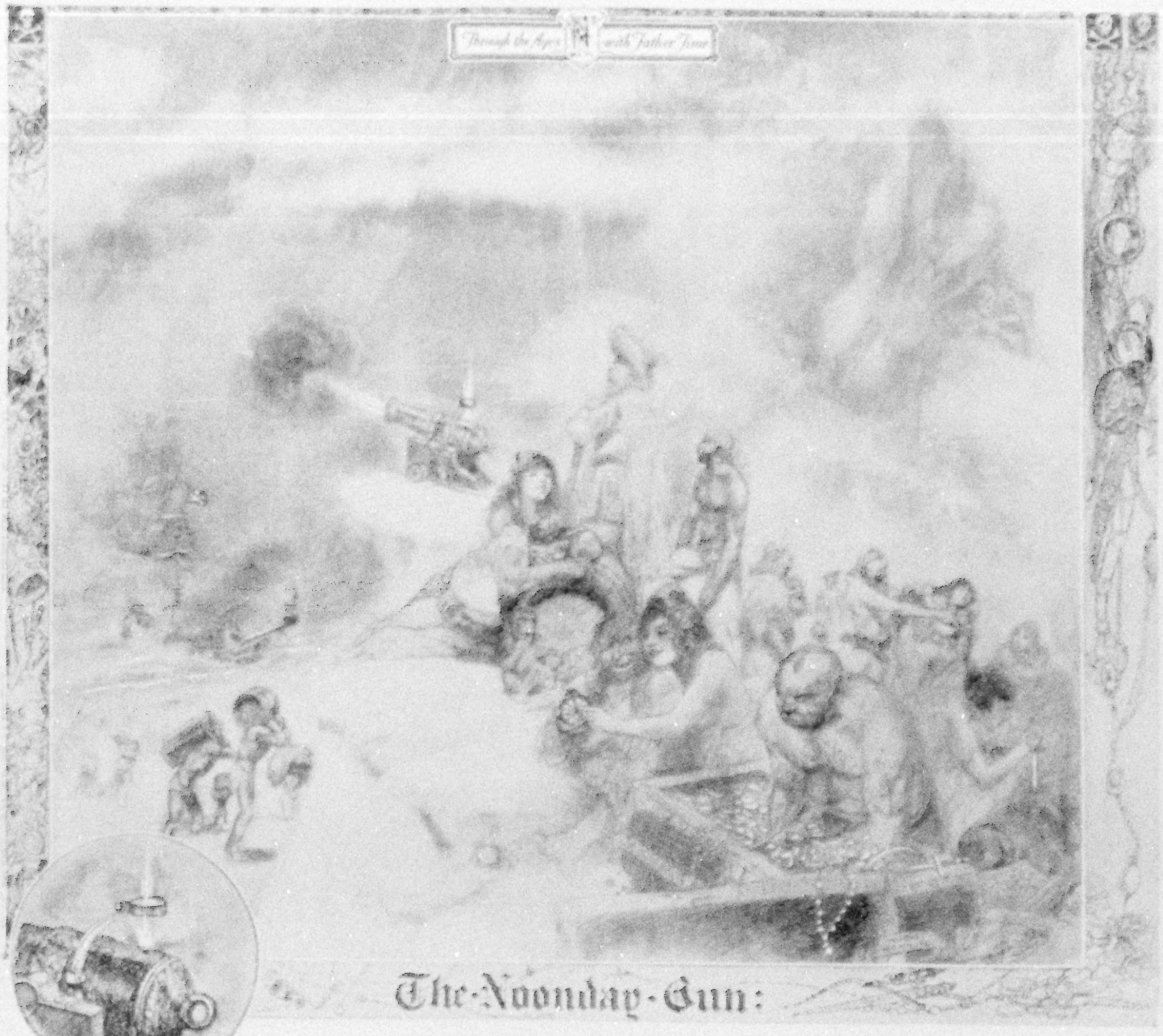
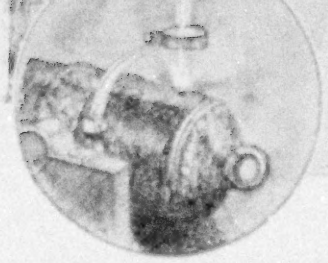




The Noonday Gun:

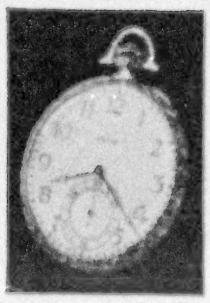
EVEN the Pirate, civilization's outlaw, bowed to the mysterious power of Time.

These buccaneer Bolsheviks had one ceremonial in common—the automatic firing of the Noonday Gun. Focused through a burning glass, the sun's rays discharged the cannon which recalled the sea rovers at midday.

A picturesque device—much like the ancient Sun Cannon in the Palais Royal. Doubtless more than one swarthy rascal, gloating over jeweled plunder, set his stolen watch by the Noonday Gun in those wild freebooting days.

Inventions run in cycles. Alfred's Time-Candle recalled the cave man's burning rope: the Pirate's Noonday Gun harks back to the Sun-Dial of Babylon. Gradually, as Father Time fled down through the ages, emerged that realization of *the value of Time* which inspired those timekeeping marvels of our world today—

Material, construction, adjustments and service fully covered by Elgin Guarantee • • • •



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Symbol of olden craftsmanship in modern furniture—the Karpen Name Plate

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Suit - $38.75
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Tyrol Wool Plain Tailored Suits and Coats are suitable for all climates and seasons. Always ready—non-wrinkling and wear indefinitely.

Ladies' and Misses' Suits
$27.75 $34.75 $38.75

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Special Junior Suits
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We offer a personal service that 74 years of success have made particularly valuable.

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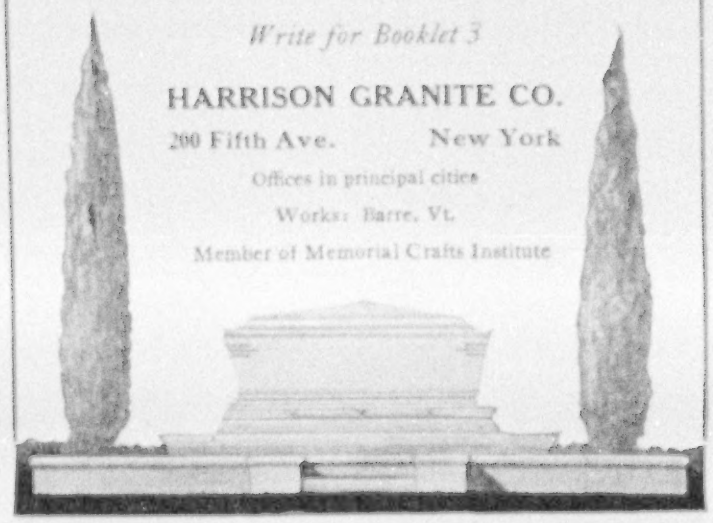
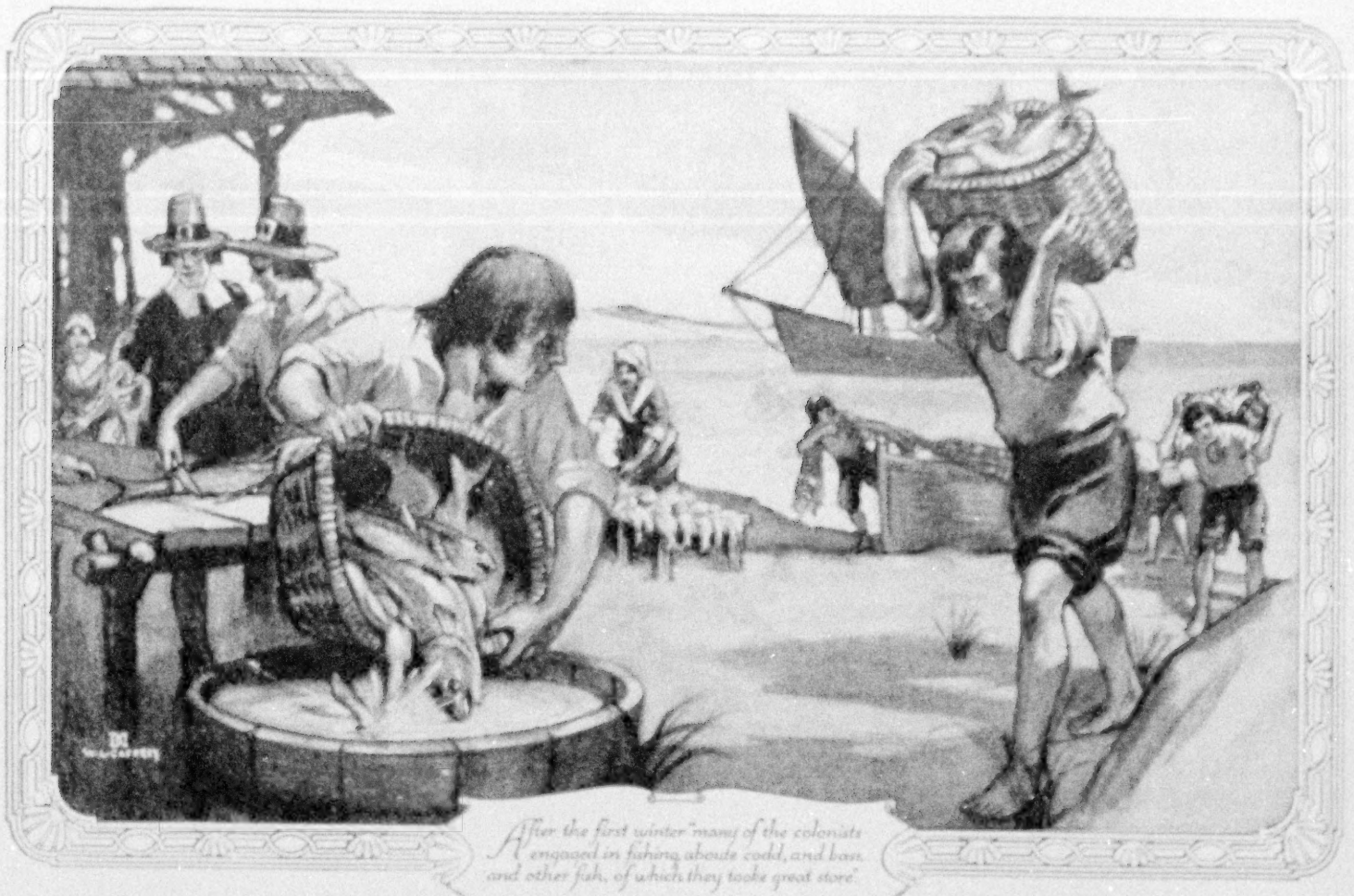
Works: Barre, Vt.
Member of Memorial Crafts Institute





After the first winter "many of the colonists engaged in fishing aboute codd, and bass and other fish, of which they tooke great store".

WHEN the Pilgrims sent their agent from Leyden in 1618 to secure the consent of the English crown to the settlement they proposed making in America, King James asked, "What profit might arise?" The single word, "Fishing", was the reply. But the colonists did not intend to engage in fishing as a business. Only by chance did they land at Plymouth Bay and by dint of circumstances they took to the sea for a means of livelihood.

Once realizing the value of this industry, however, the Massachusetts General Court soon passed enactments "for the encouragement of men to set upon fishing". In the year 1641, Governor Winthrop reported 300,000 dry fish sent to market—the early beginning of a business that in 1918 brought to Boston, Gloucester and Portland, alone, over 300,000,000 pounds of fish, valued at more than $10,000,000.

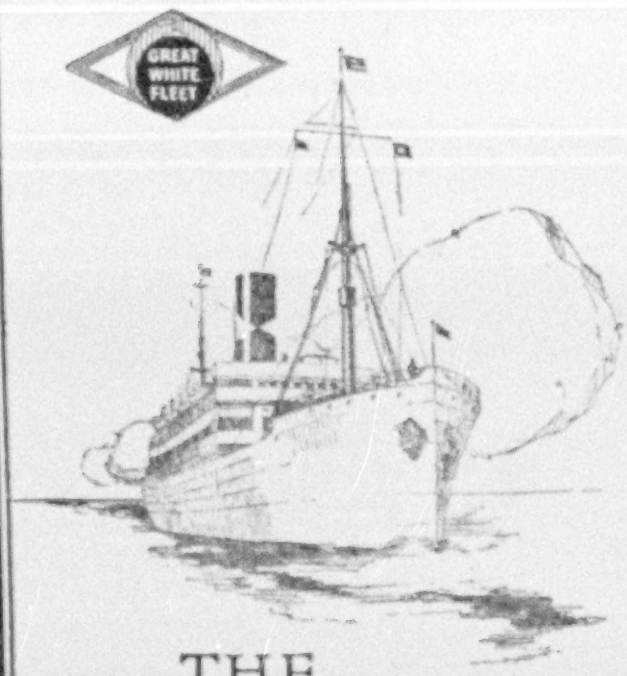
Not only in the fisheries, but in the canning and preserving of their products, does New England's interest extend. The latest available statistics report that Maine and Massachusetts together, in 1914, canned nearly 5,000,000 cases of fish and oysters — more than half the total in the United States — and over 100,000,000 pounds of cured fish.

New England has nurtured from infancy many other industries for which she is famed, besides her fisheries, and she possesses ports on the Atlantic which make her the natural marketplace for European and South American trade. The Old Colony Trust Company of Boston is prepared to render every financial service to those wishing to benefit by her many commercial advantages of location and resources.

We shall be glad to mail you our booklet, "*Your Financial Requirements and How We Can Meet Them*", outlining our many facilities. Please address Department D.

OLD COLONY TRUST COMPANY
BOSTON

"Mention The Geographic—It identifies you"



THE CARIBBEAN CRUISE

FIVE thousand miles of sunshine, health and interest—for you this winter? Make the Great White Fleet Cruise to the quaint countries of the Caribbean.

See Havana and Santiago, Cuba; Port Antonio and Kingston, Jamaica; Panama and the Panama Canal; Port Limon and San Jose, Costa Rica; Cartagena, Puerto Colombia and Santa Marta, Colombia—depending on the Cruise selected.

Sailings bi-weekly from New York and New Orleans. Duration 15 to 23 days.

Great White Fleet ships are the newest and finest in Caribbean Cruise Service. Only one class—First Class.

Write for Illustrated Folder, Cruise Leaflet and Trips Ashore Folder.

Address Passenger Dept.

UNITED FRUIT COMPANY

Room 1630, 17 Battery Place, New York

General Offices
131 State Street
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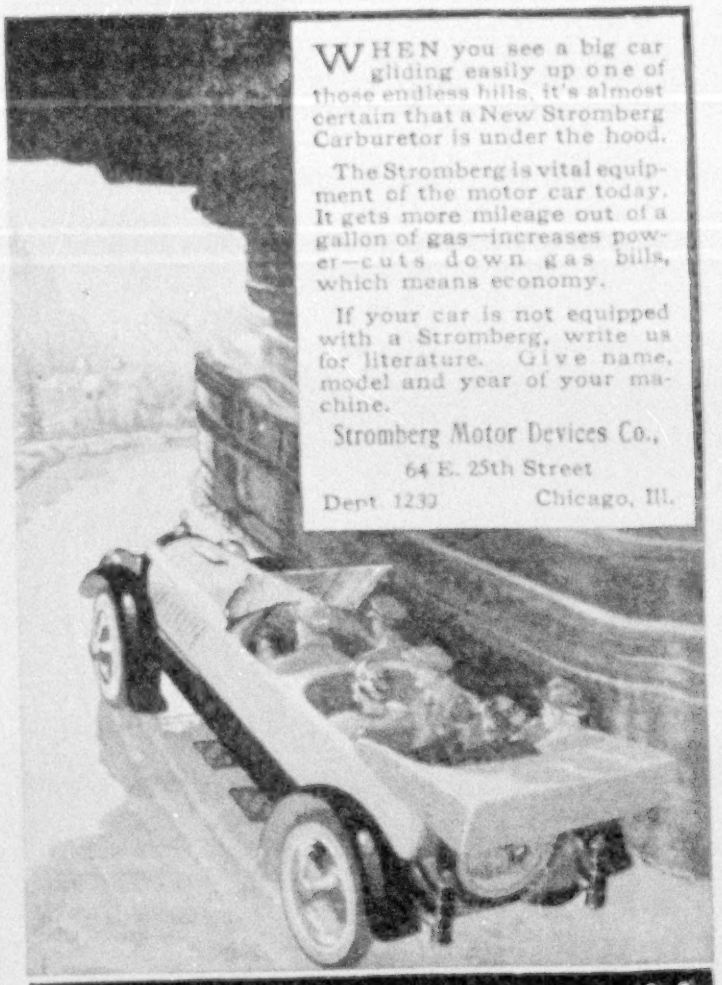
GREAT WHITE FLEET



WHEN you see a big car gliding easily up one of those endless hills, it's almost certain that a New Stromberg Carburetor is under the hood.

The Stromberg is vital equipment of the motor car today. It gets more mileage out of a gallon of gas—increases power—cuts down gas bills, which means economy.

If your car is not equipped with a Stromberg, write us for literature. Give name, model and year of your machine.

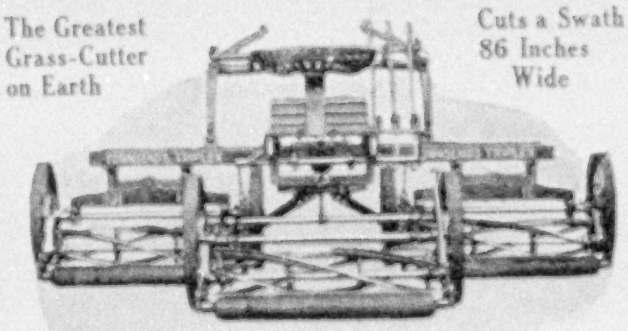
Stromberg Motor Devices Co.,
64 E. 25th Street
Dept. 1239 Chicago, Ill.

New STROMBERG Does it! CARBURETOR

TOWNSEND'S TRIPLEX

The Greatest Grass-Cutter on Earth

Cuts a Swath 86 Inches Wide



Floats Over the Uneven Ground as a Ship Rides the Waves

One mower may be climbing a knoll, the second skimming a level, and the third paring a hollow. Drawn by one horse and operated by one man, the TRIPLEX will mow more lawn in a day than the best motor mower ever made; cut it better and at a fraction of the cost.

Drawn by one horse and operated by one man, it will mow more lawn in a day than any three ordinary horse-drawn mowers with three horses and three men.

Does not smash the grass to earth and plaster it in the mud in springtime, neither does it crush the life out of the grass between hot rollers and hard, hot ground in summer, as does the motor mower.

The public is warned not to purchase mowers infringing the Townsend Patent, No. 1,209,519, December 19th, 1916.

Write for catalog illustrating all types of Lawn Mowers.

S. P. TOWNSEND & CO.
254 Glenwood Avenue Bloomfield, N. J.

Now Brush Teeth

In the new way---Remove the film

Try this new way of teeth cleaning. The test is free. It has brought to millions whiter, safer teeth. Leading dentists everywhere advise it.

See the results, then learn what they mean to you.

What ruins teeth

Teeth are ruined by a film. You can feel it—that viscous coat. It clings to teeth, gets between the teeth and stays. And most tooth troubles are now traced to it.

It is this film-coat that discolors—not the teeth. Film is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

Brushed in the usual way, much of that film is left. And very few people have escaped the troubles that it causes.

Now we combat it

Dental science has in late years found a way to fight film, day by day. High authorities have proved it by many careful tests.

Millions of people have adopted it, largely by dental advice. To careful people it is bringing a new era in teeth cleaning.

These new methods are all embodied in a dentifrice called Pepsodent. And you are urged to prove it by a pleasant ten-day test.

Five important effects

Pepsodent has five effects, all of them essential to cleaner, safer teeth. One ingredient is pepsin. One multiplies the starch digestant in the saliva to combat starch deposits that cling. One multiplies the alkalinity of the saliva to neutralize mouth acids.

In two ways it attacks the film directly. Then it keeps the teeth so highly polished that film cannot easily cling.

It differs vastly from the old-time tooth pastes, which dentists now know were wrong.

Send the coupon for a 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. See how teeth whiten as the film-coat disappears.

Within a week you will know that your teeth are protected as they never were before. And you will always want your teeth to look and feel like that. Cut out the coupon now.

Pepsodent
PAT. OFF
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The New-Day Dentifrice

A scientific film combatant combined with two other modern requisites. Now advised by leading dentists everywhere and supplied by all druggists in large tubes.

10-Day Tube Free

THE PEPSODENT COMPANY,
Dept. 991, 1104 S. Wabash Ave., Chicago, Ill.:
Mail 10-Day Tube of Pepsodent to

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Only one tube to a family

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HOSIERY for MEN
SHAWKNIT Silks are an achievement in hosiery. It is a pleasure to make them. We believe you will find it a pleasure to wear them. They look well, they fit well, and they wear well.
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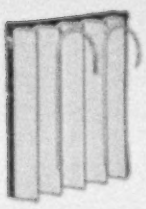
SAVO AIR MOISTENER



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Fill with water, hang on the back of any Radiator out of sight

Others for Hot Air Registers

The most efficient humidifier made. Write for FREE Booklet.

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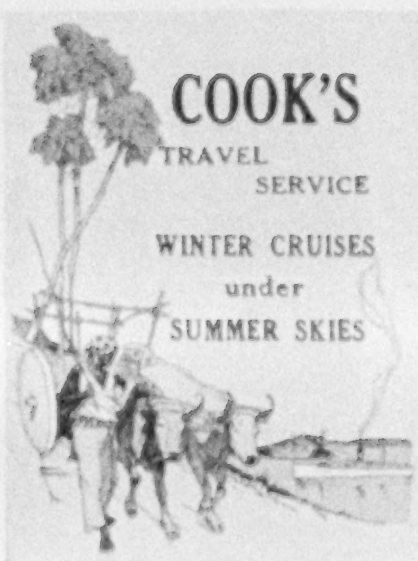

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These cruises embrace CUBA, the gem of the Caribbean—resplendent JAMAICA—wonderful PANAMA and the CANAL ZONE—and picturesque COSTA RICA. Sailing from New York on palatial steamers of the GREAT WHITE FLEET.

Jan. 29—by s.s. "Calamares" — March 12—by s.s. "Ulua"

Fascinating Shore Excursions Are Included.

CALIFORNIA. Escorted Tours. Frequent departures. Most attractive itineraries—including GRAND CANYON, APACHE TRAIL, CALIFORNIA COAST RESORTS, etc.

Other Tours to JAPAN, CHINA, PHILIPPINES, SOUTH AMERICA, ANTIPODES, BERMUDA, EUROPE, etc.

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The Golden Sunshine

that ripened the corn of which

POST TOASTIES

are made, seems to exist in every flake of this delicious food.

For winter days, these superior corn flakes bring sunshine to many a breakfast.

Their ease of serving, the fact that every particle is eatable, combined with moderate cost, make them a household favorite.

Made by Postum Cereal Co., Inc.,
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Check Up

You are the owner and sole engineer of the most marvelous engine in the world—given you at birth and set going for you by The Maker. Do you occasionally, thoughtfully check up the work this engine is doing, every second of every hour of every day?

If you do, you are a good and faithful engineer. You will finish your allotted job here with energy, effectively, happily and well.

If you do not—in the name of all that is vital to you—why not? Do not wait until it flies its own red danger signal in your face; because that signal, too often, means the end of the track. Check it up.

In this connection

THE GLEN SPRINGS

WATKINS GLEN, N. Y., ON SENECA LAKE
WILLIAM E. LEFFINGWELL, President
The Pioneer American "Cure" for Heart Disorders

Offers just the assistance you may need in checking up—intelligent rest and a careful looking-over of your human machine, especially its engine, your heart—detecting and correcting weakness in time, to the best of human ability.

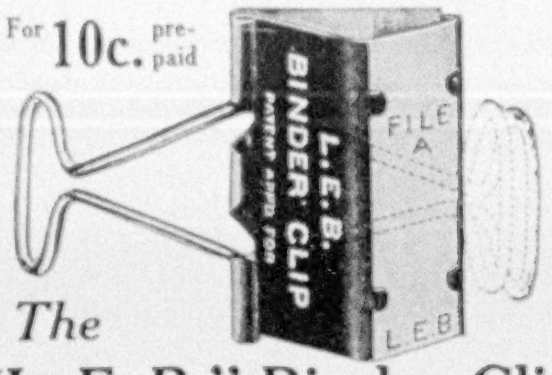
The medical world has long recognized this ability of The Glen Springs. Its Nauheim Baths, chemical and X-Ray laboratories and scientific treatments under the direction of physicians, are particularly adapted to heart disease, circulatory, kidney, nutritional and nervous disorders, rheumatism, gout and obesity. It is the only place in America where the Nauheim Baths for heart and circulatory disorders are given with a natural, calcium chloride brine.

Situated in the beautiful Finger Lakes region of New York State. Clear, dry, invigorating atmosphere. Every comfort for yourself and family. Open all year, but Winter, with the elements of oppressive weather absent, is the most favorable time to check up.

Illustrated booklets with detailed information will be sent on request

A Loose-Leaf Binder

For 10c. prepaid



The
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Patented May 18, 1915

will instantly make a book of any papers with title on its back

You can instantly remove any paper therefrom or add any paper thereto. With it letter files are kept on shelves just the same as books. After the Binder Clip is applied, the arms may be reversed and snapped against the documents or papers, and thus kept out of the way.

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A Clover Gift for Christmas

A holiday package of this pure, deliciously flavored honey—"**Nature's own spread for bread**"—will delight every member of your friend's family and give the children a sweet that is really "good for them" to eat.

WHITE CLOVER HONEY

by Parcel Post to your door.

And order your own supply early so that the housewife can add that tempting flavor to Xmas cakes, pies, and puddings.

5-Pound Can, Prepaid, $2.00

Apiaries of DR. E. KOHN & SON
GROVER HILL OHIO

Kodak as you go.

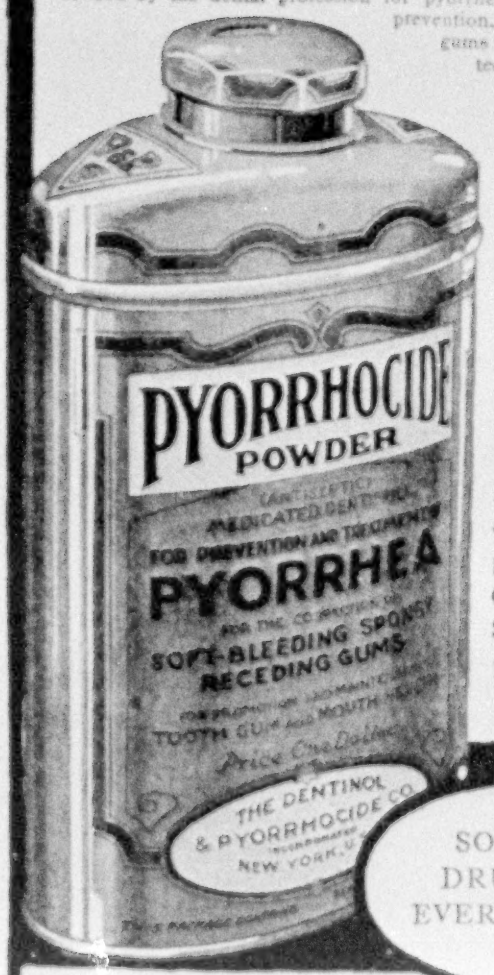
Eastman Kodak Company, Rochester, N. Y.

PYORRHOCIDE
POWDER
ANTISEPTIC
for Pyorrhea prevention

Gums that bleed easily—

that are soft and sensitive—warn you that pyorrhea is developing. Loss of teeth will surely follow unless pyorrhea is checked or prevented.

Dental clinics, devoted exclusively to pyorrhea research and oral prophylaxis, have *proved* the specific value of Pyorrhocide Powder for restoring and maintaining gum health. It is prescribed by the dental profession for pyorrhea treatment and prevention. It keeps the gums healthy and the teeth clean.



Pyorrhocide Powder is economical because a dollar package contains six months' supply. Sold by leading druggists and dental supply houses.

Free Sample

Write for free sample and our booklet on Prevention and Treatment of Pyorrhea.

The Dentinol & Pyorrhocide Co., Inc.,
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1478 Broadway
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SOLD BY DRUGGISTS EVERYWHERE

Our research work and our clinical and laboratory facilities enable us to disseminate information that is authoritative on pyorrhea treatment and prevention.

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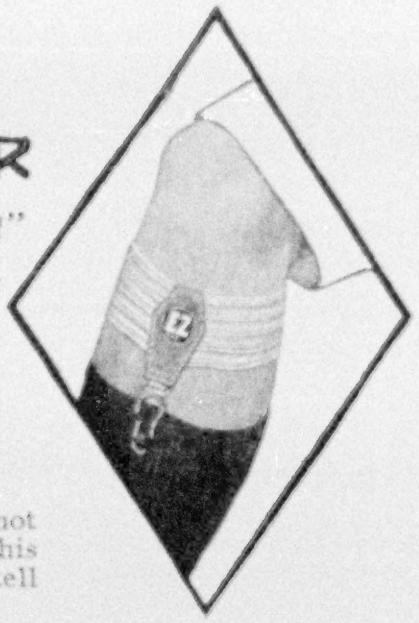
You may think that true leg comfort is possible only when you're not wearing a garter. The

E.Z. GARTER

"Wide for Comfort"



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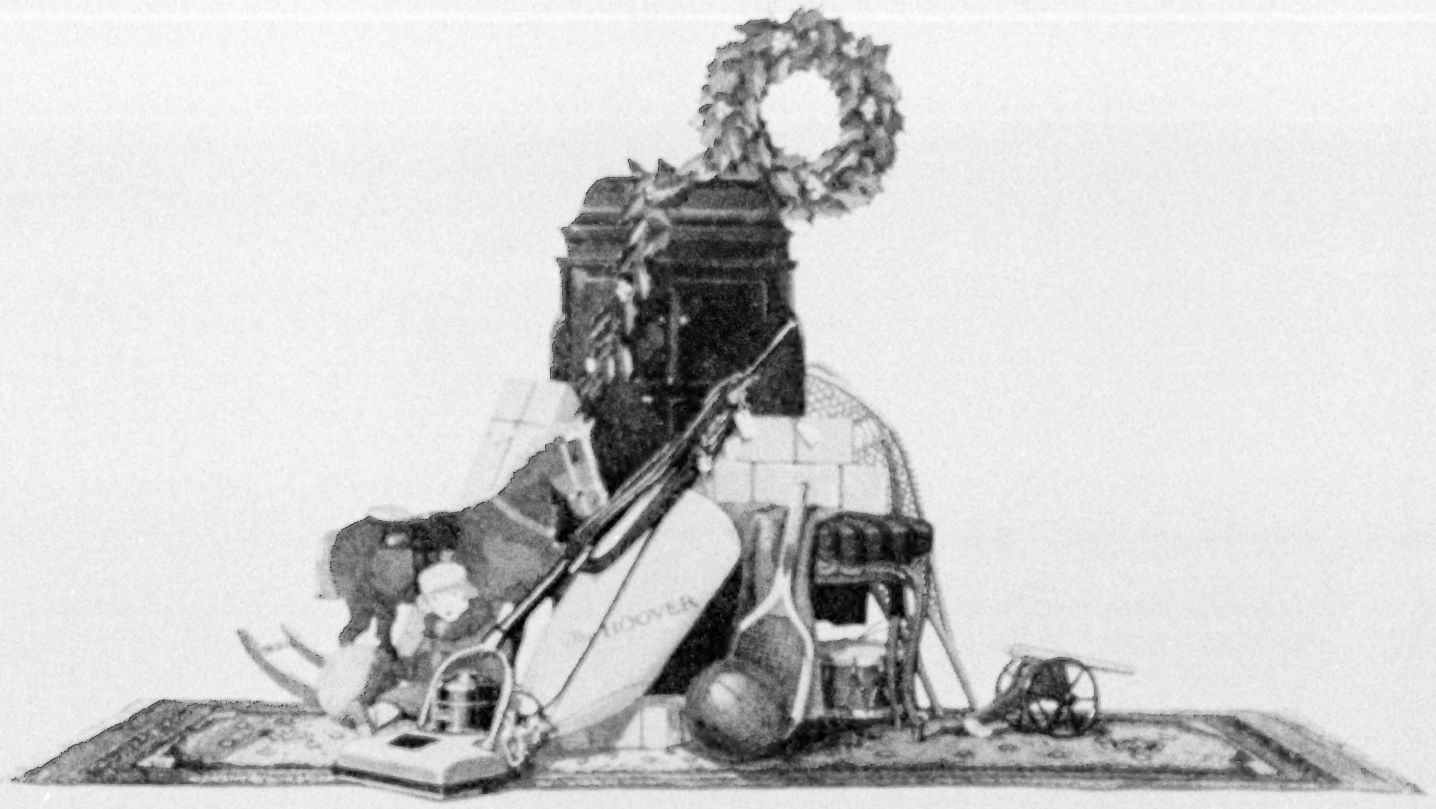

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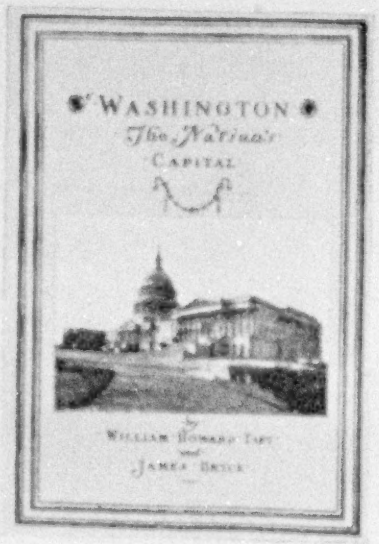

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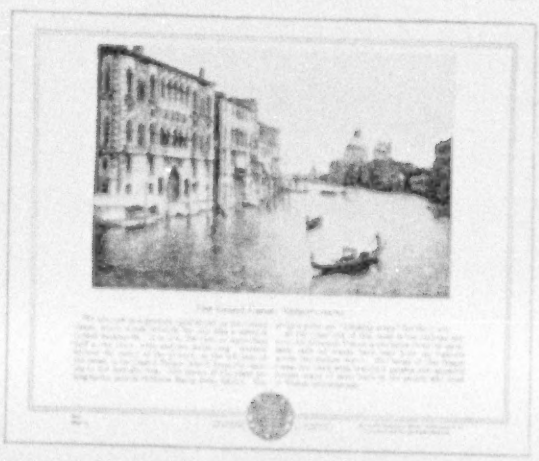

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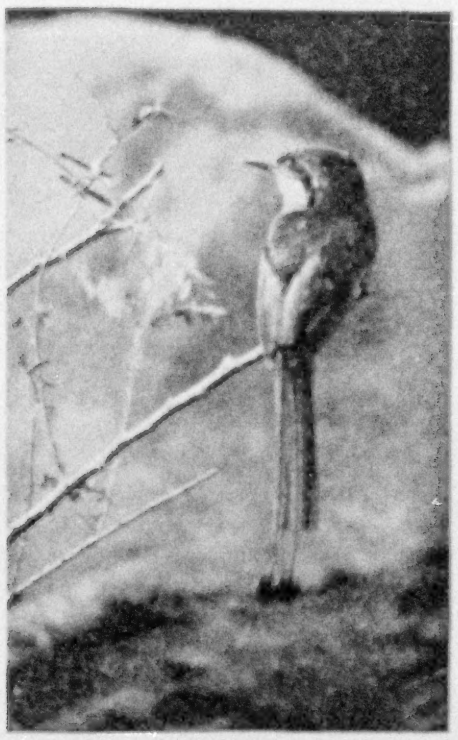

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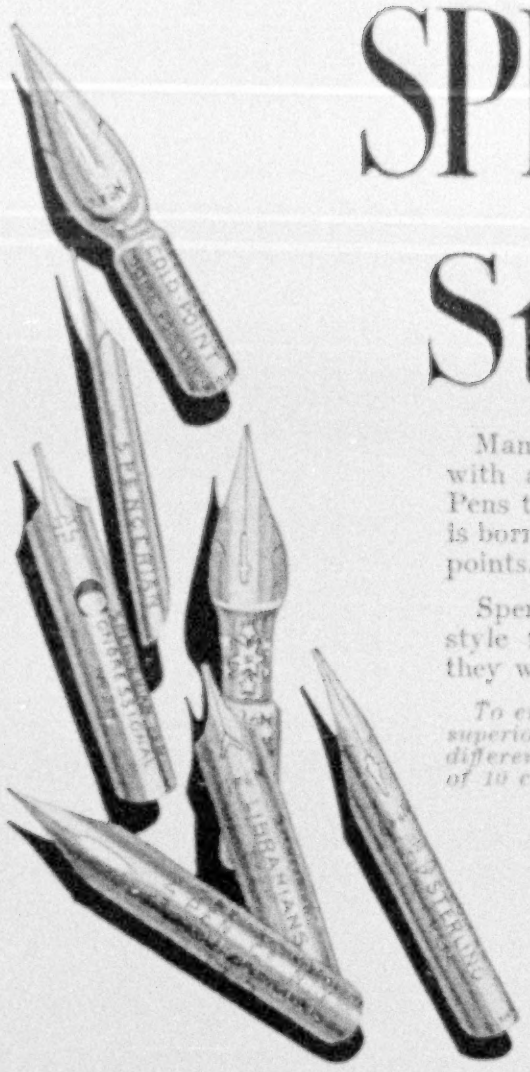

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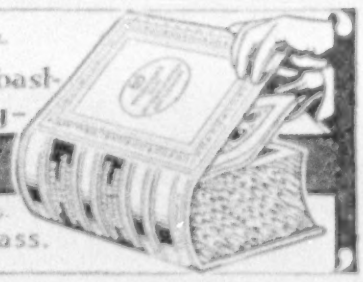

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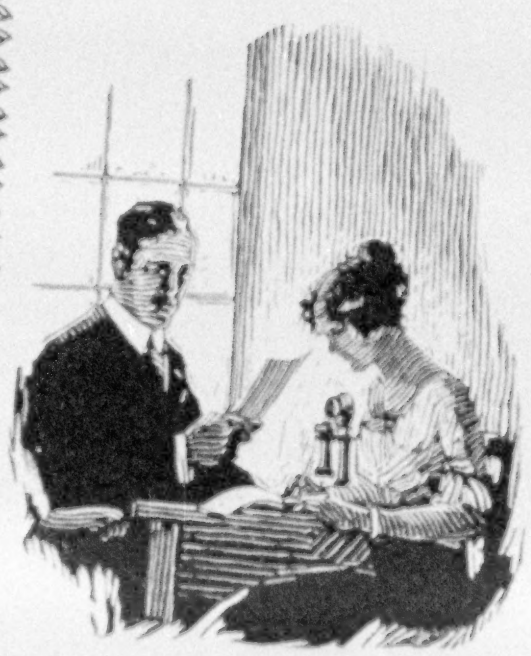

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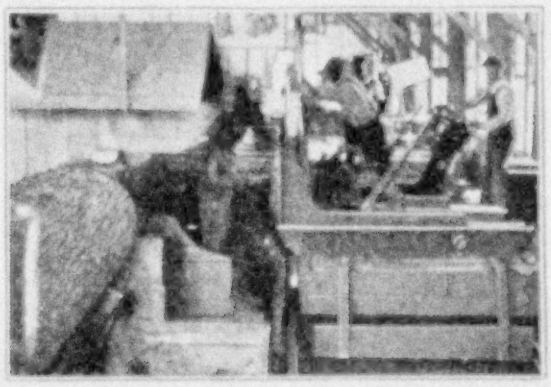

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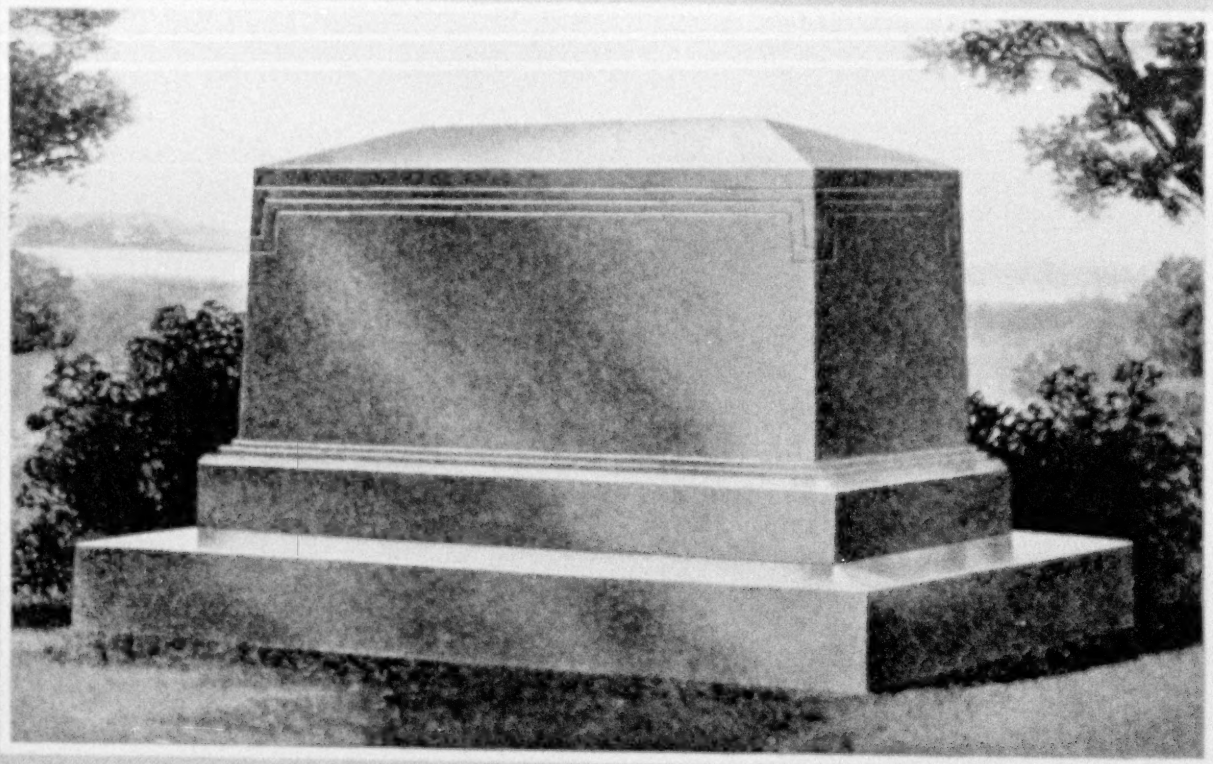

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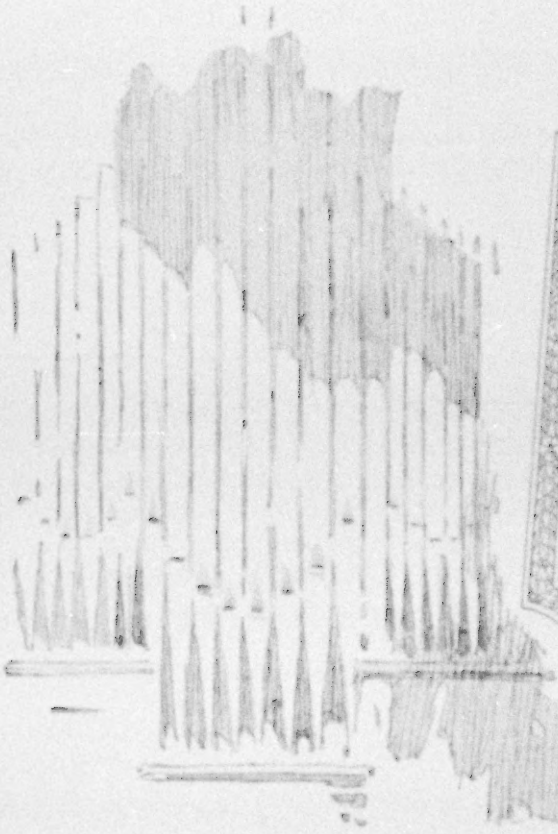

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